Amateur Radio

Volume 82
Number 3
March 2014
Price: $9.70 incl GST
www.wia.org.au

WIRELESS INSTITUTE OF AUSTRALIA

Parks portable At the top of VK2

- Foundation Corner: Preloved HF rigs
- Add LF to your VK5JST antenna analyser
- Build the SDR40: a simple SDR Rx
- A new LF beacon in Mildura

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The radio... YAESU

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FT DX 1200

This medium-price HF Transceiver Excels on all fronts. The High Frequency Design Technology it has inherited, ensures "Best in Class Performance". The Outstanding Operability is Perfect for the DX Scene.

Superior triple conversion receiver, and optimum gain distribution at each IF stage will eliminate out of band unwanted signals.

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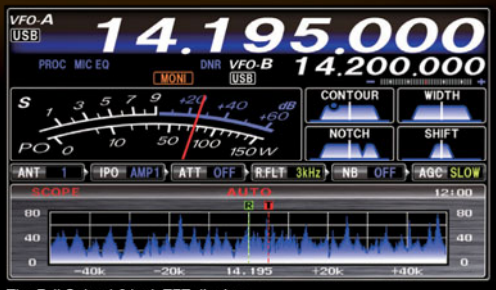
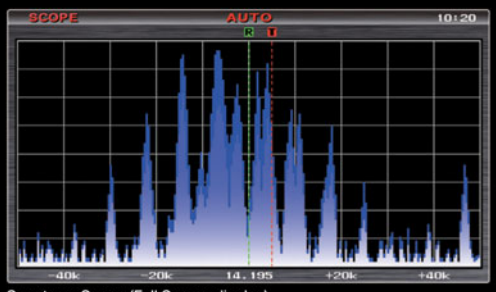


The Full Color 4.3 inch TFT display



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This month's cover

The cover this month shows your Editor activating the SOTA summit VK2/SM-001 Mount Kosciuszko in the Kosciuszko National Park – the top of VK2. SOTA and other portable operators develop their own solutions for carrying the equipment required for an activation. Steve Mahony VK5AIM describes his solution for activating parks on page 6. Photo by Rod Collman VK2TWR.

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Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back Issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's oldest
National Radio Society, founded 1910.

Representing
The Australian Amateur Radio Service
Member of the International Amateur Radio Union

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Editorial

Peter Freeman VK3PF

More portable operations

In my last Editorial, I said that we needed more high quality images for the cover. I had troubles finding one for this issue, so you have one of me out on Mount Kosciuszko back in early November, taken by Rod VK2TWR.

The trip was Rod's second SOTA activation, if I remember correctly. Rod had listened to the presentations at GippsTech in July about equipment for SOTA and to the discussions about SOTA between Wayne VK3WAM, Andrew VK2UH/VK1DA and me during the weekend – all had stayed at my home. I had many telephone conversations with Rod over the next couple of months and I planned a long weekend in the Snowy Mountains with Rod. It turned out that Rod could not wait and he activated his first summit in mid-October.

The trip to Mount Kosciuszko was uneventful and very enjoyable, despite the wind up high. The strong rays from the sun were a concern – we both should have applied sunscreen earlier and more frequently during the day. We opted for the shorter approach to the summit, parking at Thredbo and paying for the chairlift ride up to the Crackenback Station. It is then an uphill (with occasional downs as well) of about 6.5 km to the summit.

Many think incorrectly that Mount Kosciuszko is our nation's highest peak. It is the highest point on the Australian mainland, but is surpassed by Mawson Peak on Heard Island at 2,745 m and Mount McClintock at 3,490 m in the Britannia Range in Australian Antarctic Territory. And no, these summits are not yet registered for SOTA – I am sure they would present formidable challenges!

Rod and I went on to activate several more peaks over the first weekend of November. Rod is very fortunate – he lives in the Snowy Mountains area and has many SOTA summits relatively close to home. His activator score is rising rapidly!

I had more fun in the field with Rod over the Australia Day weekend, activating several summits.

As you will see from the SOTA report this month, activity continues to rise. As I prepare this Editorial, there are 37 VK chaser stations who have qualified for Shack Sloth. We still only have one VK activator qualified for Mountain Goat status, but others are steadily building their tally.

In addition to all this SOTA activity, stations have been busy activating National Parks and Conservation Parks for various awards.

Fires, smoke and summer heat

One thing that has been slowing down all these outdoor activations has been the weather conditions in southern Australia. Both South Australia and Victoria have been experiencing very hot, dry and high wind conditions, leading almost inevitably to bushfires. Many regular field operators have been keeping a close eye on conditions and

Continued on page 5

WIA comment

Phil Wait VK2ASD

The Good, the Bad and the Ugly

My President's comment in December discussed the state of the WIA's finances, and highlighted a fairly urgent need to reverse a comparatively small but tenacious financial deficit.

I explained that recent cost increases associated with printing and distributing *AR* magazine have not been fully offset by savings achieved in other areas of WIA activity, and that the choice we have is now very much between raising membership fees or moving to a digital-only *AR* magazine format, or a combination of those moves.

As you can imagine, such an important issue, which goes to the very fabric of the Institute, has dominated discussions between WIA Directors over the past six months and the Board has had to make some difficult decisions.

In many ways, the easiest option would have been to cease printing *AR* magazine and move to a digital-only format, which would have resulted in an immediate saving to the Institute of about $105,000 per year. No doubt many members would have preferred that option, but the problem is, we just don't know how members would react to such a fundamental change in the delivery of *AR* magazine. We do know that many older members, or those with slow data services, would be disadvantaged.

In the Board's view, changing to a digital-only publication almost overnight would be a very risky proposition, quite possibly too risky, even if the alternative means a fairly significant membership fee increase to support the paper edition. We suspect that a very significant number of WIA members place a high value on finding *AR* magazine in their letterbox each month.

The WIA Board decided that the better option is to introduce a digital edition of *AR* in parallel with the existing paper edition, allowing its acceptance to be measured by counting the number of member downloads from the WIA website. **Accordingly, the WIA Board has asked the Publications Committee to introduce a digital *AR* magazine option in pdf format for members-only download from the WIA website -** *(the good news).*

Naturally, that doesn't fix the financial problem, in fact, it makes it slightly worse, and the drain on the WIA's finances cannot be allowed to continue without any possibility of further large cost savings. **To address that issue, the WIA Board has decided to increase WIA membership fees to $95 per year for full members, with other membership categories increasing in proportion, from 1st July this year –** *(that's the bad news).*

The Board is very conscious that this is a fairly large increase in percentage terms. The increase will certainly allow the WIA to recover losses from previous years and should cover any further cost increases in the short-to-medium term, even allowing for a small attrition in membership. Most importantly, it will give us time to assess the uptake of the digital edition of *AR*, so a more informed decision about migrating to a digital-only magazine can be made sometime down the track, remembering that, if *AR* magazine does eventually go digital-only, further membership fee increases should be avoidable for some years.

Naturally, any fee increase will cause difficulties for some members, and no-doubt some members will be unhappy. **To ease the burden as much as possible, the Board has decided to introduce an automatic quarterly payment option for payment of membership fees by direct debit from a member's bank account.** Our treasurer, John Longayroux VK3PZ, is in the final stages of that implementation, which we hope will be attractive to some members.

I said before that one of the issues that prevented us from moving immediately to a digital-only format is that we just don't know how it would be accepted by members. In fact, we don't even know what percentage of members have internet access suitable for a large magazine download in acceptable time, or how you use the internet in your day-to-day lives.

In the centre of this magazine you will find a survey which is intended to give us more information about you, your potential access to an on-line digital magazine, and also your views about, and suggestions for, the WIA – *(and I know that that could get ugly).* **I encourage everyone to take part in the survey. If possible, please complete the survey on-line, as it will assist in ensuring your views are**

Continued on page 5

WIA news

Wireless Institute of Australia Merit Awards

The Board of the WIA, at its discretion, makes awards to members for their contribution to amateur radio. These awards are usually presented at the WIA's Annual Conference and AGM. The Board is now calling for nominations. The nomination form is available for download from the WIA web site.

When completing the survey, you are not required to suggest which award should be made. The Board will assess each nomination, and decide which awards, if any, it will make. Clearly it is best to include as much information as you can so as to inform the Board, and please do keep it in some sort of chronological order. Also include information about any other awards they may have received. It is important to recognise the work done within the hobby, so please do give some thought to nominating someone you know.

Nominations close on 31st March, and awards will be announced, and where possible presented, at the WIA's 2014 AGM and Conference on the Sunshine Coast on May 16-18.

The Expo to show what we are about

The first registrations for the PR4AmateurRadio Expo in April have been received as we head rapidly towards this important event.

The WIA believes the Expo, run by its many affiliates, showcases the benefits of modern Amateur Radio and engages all ages in the community.

For the best image a display must be neat, tidy, and always safe. This is an excellent opportunity to expose the public to the many diverse positive elements of amateur radio and how it fits into the community.

Part of the effort should be designed to get people interested in and taking up amateur radio.

It helps to have Foundation licence training and assessments ready to go after Easter, giving those attending the Expo, or reading about it in the local newspaper, a chance to give us a try.

All ready for the Expo are the following:

- The RadioActives in Ruffey Park, Doncaster in Melbourne's northeast.
- Adelaide Hills Amateur Radio Society at Belair National Park.
- Summerland Amateur Radio Club in the Lismore New South Wales central business district.

Others have indicated they will be playing their part in the vital role of promotion during the Expo, held during April 11th to 13th.

Details of the PR4Amateur RadioExpo were emailed to clubs and organisations, and regularly promoted in the VK1WIA broadcast.

The role of promotion - PR4AmateurRadio Expo

The Wireless Institute of Australia (WIA) takes very seriously the need for appropriate publicity for modern Amateur Radio, and its many benefits for the individual and the community. This is why it has announced the PR4AmateurRadio Expo to be held in early April to enable clubs, organisations and groups to showcase what we have to offer.

On the weekly VK1WIA broadcast, supplemented by the WIA website, Amateur Radio magazine and direct emails to our affiliates, there have been frequent reminders about the Expo. The WIA believes everyone can tell others that the hobby does exist - after all word-of-mouth publicity can be very effective.

For six months there has been a series of related topics issued on some of the elements of public relations, as they can be applied to amateur radio. These include thinking about 'How to describe amateur radio', 'Having the right speakers and representatives', 'A picture can tell the story', 'Learning is the key to everything', and relationships with the growing do-it-yourself audience.

The WIA has surveyed the clubs and organisations via email and found promotion of amateur radio is faced with a few barriers, but there have been some very worthwhile responses to consider. The WIA has announced that its PR4AmateurRadio Expo is to be held through the clubs or groups, on during April 11, 12 and 13.

Expo details and on-line registration are on the WIA website. With only a few weeks to go - now can be the time to make the necessary preparations.

WIA Election of Directors

See the mailing sheet from this issue.

Express your right to influence your organisation.

Editorial

Continued from page 2

have opted to stay at home when conditions are marginal.

Eastern Victoria has had several large fires burning for days and weeks. The local area here has been in a smoke haze for days, with fires in two of the local open cut coal mines and bushfires both nearby and further afield. Hopefully we may receive some decent rain falls in the near future to give some relief. But I am sure that emergency services will continue to be busy for some considerable time to come.

Until next month,

Cheers,

Peter VK3PF

WIA comment

Continued from page 3

accurately recorded and speed up the process of data analysis.

For those of you who do not have internet access, or find it too difficult to download or read large files, we definitely need to hear from you – so please remove, or copy, and fill out the paper survey at the centre of this magazine and post it back to the WIA office.

So, not all good news, but it was going to happen sooner or later. Personally, I am pleased the Board decided to keep the paper edition of *AR* magazine at least for the medium term as, although the WIA does a great number of other things for members, *AR* really is the most tangible member benefit we have.

Phil Wait VK2ASD
President, WIA

THE WIRELESS INSTITUTE OF AUSTRALIA

ABN 56 004 920 745

Notice of Annual General Meeting

Business

1. To receive and consider the Annual Financial Statements, Directors Report and Independent Auditor's Review Report for the year ended 31 December 2013.
2. To announce the results of the nomination for the election of Directors.
3. To transact any other business that may be brought before the meeting in accordance with the Institute's Constitution.

Notice is hereby given that the Annual General Meeting of The Wireless Institute of Australia will be held at The Shed, at Aussie World, Sunshine Coast on
Saturday 17th May 2014 at 9.00 am

By Order of the Board
David Williams
Secretary
17 February 2014

Note A Member is entitled to appoint one proxy only, who must be another Member or a representative of another Member, and that proxy is entitled to vote on a show of hands or on a poll. A form of Proxy accompanies this Notice of Annual General Meeting.

While non members of The Wireless Institute of Australia are welcome to attend the Annual General Meeting and the Open Forum, only members are entitled to vote, and will be identified by a coloured card. Members should register and receive a coloured card at the registration table which will be open outside the meeting room from 8.00 a.m.

Section 250S of the Corporations Act provides that the chair of an AGM must allow a reasonable opportunity for the members as a whole at the meeting to ask questions about or make comments on the management of the company.

Open Forum Immediately following the formal Annual General Meeting an Open Forum will be conducted. An additional detailed report will be submitted on behalf of the Board, and the Institute's coordinators and those responsible for particular aspects of the Institute's activities will be asked to submit a written report which will be available for those attending the Forum. Any major issues affecting each area of responsibility will be identified and the author of each report who is present will be given the opportunity to briefly comment.

Members are encouraged to discuss any matter arising from any of the reports, and to raise any other matter affecting amateur radio or the Institute.

This format will avoid any restriction arising from the requirement to give notice of business to be formally raised at the AGM.

Parks portable

Steve Mahony VK5AIM

Some *AR* readers may have read my article in *AR* for July 2013 about my enjoyment of using my IC-703 HF transceiver portable. After reading of the commencement of SOTA activities here in VK, having read of its organisation in the UK in *RadCom* and *Practical Wireless*, I thought 'Good. I will have a go at that. The IC-703 would be ideal.'

About 12 months ago, after reading a magazine preview in *Practical Wireless* on a small portable HF all-band whip, I purchased one. It consists of about 500 mm of 16 mm plastic tube with a continuous winding on it, tapped at all the HF bands, and a long telescopic whip that screws on the top section. The taps are selected by a wander lead, similar to the 'Outbacker' type whips. The telescopic whip is adjusted for the best VSWR but the auto ATU in the IC-703 makes this almost unnecessary. It is designed to fit the FT-817 or IC-703 transceivers.

It works well on all bands. Checked with a SWR meter, an RF RF ammeter and a field strength meter it certainly takes all the RF you feed into it. Contacts have been made locally and interstate from quiet locations and with good band conditions. I still think that nothing is as good as a 'wire in the sky!'

I tested it out on a couple of local SOTA (Summits on the Air) nominated sites and it worked well. I then decided that most of the SOTA sites were not for me with my osteoarthritic joints. I will be 80 years old by the time this is printed. When the VK5 National Parks and Conservation Parks Award was launched, I decided I would take part in it with the IC-703, it would be much easier on the old joints.

Photo 1: The multiband whip antenna and the band changing wander lead with tapping points.

In the review of the IC-703 in *Practical Wireless* magazine, and a brochure on the transceiver, they showed a special Back Pack for the 703 designed to take it portable. I enquired about it but it was not available here in VK. On rummaging through some of my stepson's teenage stuff left behind when he left home, I found an old back pack school bag. After a trip through the washing machine it was in reasonable condition and looked like it had possibilities.

Photo 2: The recycled backpack into which the IC-703 portable setup goes.

With the 703 and a 12 V, 7 Ah gel cell some measurements were made. Patterns were made with cardboard from used cornflake packets. These cardboard boxes are most useful to make patterns of brackets, boxes, plates and the like for amateur projects. The use of these cardboard boxes goes back to my childhood days during WWII when there was a shortage of toys imported from England, after all the Brits were too busy looking after themselves to worry about kids toys. With scissors, cardboard and Clag glue I could design and make almost any toy. I am sure older readers can remember the conical glass bottles with the small brush used to apply the glue, together with wooden spring clothes pegs used to hold it all together until the glue dried.

With some scrap pieces of 10 mm three ply I ended up with a 'T' shaped frame that fits snugly in the backpack. A home-made mounting bracket, easily designed with a cardboard pattern, holds the IC-703 along with a clamping bracket to hold the gel cell battery. A small speaker is fitted on the front as the top mounted IC-703 speaker now points to the wooden frame. On the back of the wooden frame is a small bracket holding a bulkhead SO-239 socket to hold the telescopic whip antenna via a short length of coax to the transceiver. Four rubber feet fitted to the base allow it to sit on uneven surfaces. A rope handle allows it to be carried easily. The whole setup just slips into the backpack. Pockets in the pack carry the microphone, whip antenna, logbook and pencils along with any other necessary bits and pieces.

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• 130 x 67 x 44mm
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• Includes 2 x LR44 batteries
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Battery not included
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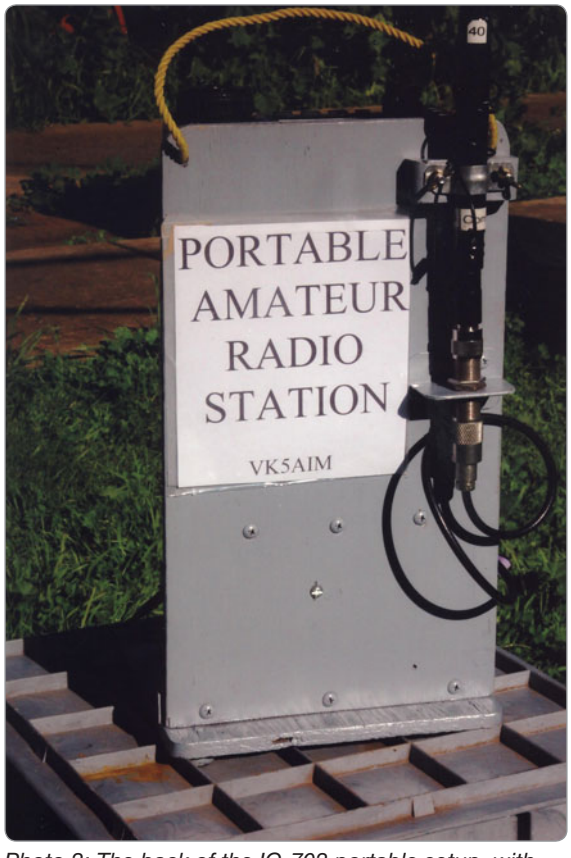

Photo 3: The back of the IC-703 portable setup, with the bracket and antenna mount. The label/notice is for visitors!

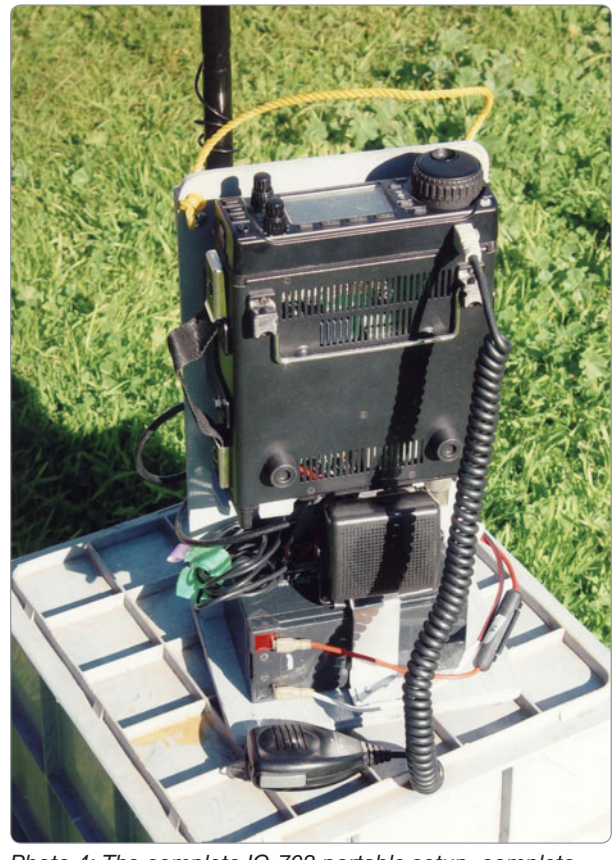

Photo 4: The complete IC-703 portable setup, complete with carry handle.

I have had three sessions of park forays using the system with the 'Slinky Squid' antenna with great success. On my journey to the park sites I have set the IC-703 on the floor on the passenger side of my car, running it from the car 12 V supply, connected up to the 'Outbacker' whip on the rear of the car, and listened for the park stations already in action. I even called in to the group on arriving in the park to check propagation from the locality. I had the comment, 'that will do for a QSO, you are there.' 'No, I said, that's not in the spirit of the Award: wait till I am all setup in the park properly.'

Once in the park it's quite easy to erect the Slinky Squid vertical antenna, carry the IC-703 package to within easy coax cable reach, connect it all up and be ready to go. In good weather you can just sit down on the ground and enjoy the QSOs.

GippsTech 2014

Those wishing to present at this year's conference should contact the Chair as soon as possible:

vk3pf@wia.org.au

Peter VK3PF
Conference Chair

It is time to again plan ahead: GippsTech 2014 will be happening on the weekend of 12 and 13 July, at Federation University Australia Gippsland Campus in Churchill, Victoria, about 170 km east of Melbourne

GippsTech has a well-recognised reputation as a premier amateur radio technical conference, with its focus primarily on techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts. Even if you are new to these areas of amateur radio, you will learn a great deal of information during the weekend.

A Partner's Tour will be conducted, together with an informal social gathering for dinner on Friday and a Conference Dinner on Saturday.

Details of the conference are available from the Eastern Zone Amateur Radio Club website: ***http://www.vk3bez.org/***

Registration forms will be available from the website in the future.

Foundation Corner 24 – 'Pre-loved' HF transceivers

Ross Pittard VK3CE - vk3ce@wia.org.au

Photo 1: The Yaesu FT-7B.

Following on from our look at the second hand VHF/UHF market, I thought it good idea to look at the HF radio offerings. HF radios can cost anything up to several thousand dollars, but a good working second hand rig can be bought for as little as a couple of hundred dollars.

Before you buy anything it is worth going over a few points; do you want a portable, mobile or base station? What power levels and bands are needed? Remember that 'F' calls are only permitted 10 watts so if purchasing something with a higher power make sure it can be easily throttled back to 10 watts.

Though not as many models to choose from, HF radios can be a bit daunting to the uninitiated, as there are a number of different 'eras' that they can be lumped into. One is the all valve era, second is the transistor with valve final era and last is the all solid state era. There is absolutely nothing wrong with valve rigs, but unfortunately valves are becoming increasingly harder to obtain, so if you are looking at one of these early rigs, try asking if a spare set of valves could be included in the deal.

An ideal starter rig for a Foundation call holder is the FT-7 made by Yaesu in the early 70s, it is solid state and runs 10-12 watts. These are easy to work on as they are built of small modules that plug into a wiring harness and extender boards are around or can be made. They are increasingly becoming available second hand and are usually priced around the $200 mark. This was succeeded by

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the FT-7B with around 30 watts output power. Both of these rigs came with a mobile mounting bracket.

A very popular rig in its day was the Yaesu FT-101 series having valve finals and coming in many variants, with some having WARC bands while others do not. The series ran from the 70s through to the early 80s and are seen at many hamfests. A good goer should be in the range $200-$500. Remember these are 100 watt rigs and you may need an experienced amateur in HF rigs of this era to throttle these back to 10 watts.

Photo 2: The Yaesu FT-101ZD – which had the WARC bands included.

Following on from the 101 series, Yaesu, as with the other big two manufacturers, started producing solid state rigs of increasing complexity, and reduced size. This is fine if you need to fit one to a modern car but makes servicing increasingly difficult for the average amateur operator.

An interesting Yaesu model was the FT-747GX which I owned some years ago. It was, I think, the only Yaesu rig to come out with an all plastic case which was sprayed inside with metallic paint. It worked fine but it was a cow of a thing to remove the plastic case particularly when it was older and the plastic less pliable.

The Kenwood equivalent to the FT-7 is the TS-120V, also a 10 watt rig, fully solid state and ideal for base or portable work; the TS-120S is the 100 watt model. These came out in the mid 70s and make a great first rig and the one I own has become the shack standby rig. These can be purchased at many hamfests again for around the $200 mark. The Kenwood TS-130V and S models came out a little later and are identical apart from having the WARC bands fitted, and these are the preferred models to go for as they will have a better resale value particularly with Advanced licensees. It's easy to tell a radio with WARC bands, just have a look at the band switch; it will have a 30 m, 17 m and 12 m position.

Photo 4: The Kenwood TS-120V.

Popular Icom rigs of the eighties include the IC-701 and IC-720, both being 100 watt rigs and all solid state and can be seen for a couple of hundred dollars at hamfests. The ever popular IC-706 in its variants has been around since the late nineties and usually is priced around $700 and upwards depending on model and condition. Icom doesn't appear to have many low power rigs in its line up: the only 10 watt rig I could find was the IC-703 from around 10 years ago. Of course all the solid state rigs have a low power setting which are suitable for Foundation licensees.

Photo 3: The Icom IC-720A.

Before embarking on a purchase do find out as much as possible about the rigs you intend to look at. A good place for information and usually a photo of the rig is the RigPix database where some of the pictures for this article came from - Reference 1. If you are lucky this database may often include a copy of the user manual.

Another useful site is mods.dk – Reference 2. Unfortunately it has begun to charge access fees for multiple downloads but there is a Russian mirror which is still free. Both these sites have information on common faults, modifications and usually a service manual as well as an operating manual. Of course we have to remember that Foundation licensees are not permitted to open or modify radios but the information can be used as a tool for comparing rigs and seeing what faults are common to a particular model. It's also handy to have this information if you can find an experienced amateur who can help you modify or adjust the rig to suit you.

There are many other places that provide information on particular radios including of course the manufacturer's web pages. Many companies now provide scanned

Photo 5: The Yaesu FT-747GX.

copies of both operation and service manuals for download and a quick trip to the local Officeworks store usually ends up with a good looking hand book neatly bound for a few dollars.

I get amused at the number of commercial test equipment manuals being sold on eBay, usually on disc, that are freely available from manufacturer's sites at no charge. Hewlett Packard and Fluke are two good examples of this.

One of the main concerns these days is the attitude of manufacturer's service departments; some will not work on rigs over a certain age. I can understand their reluctance trying to repair an old ex-mobile rig that is about finished through neglect but I cannot see how an arbitrary cut-off date for repairs to older gear that is still in pristine condition helps their brand name in the longer term. So if you are thinking of buying something and want the comfort of knowing it will be repaired in the event of a problem I suggest ringing around first before buying.

Photo 6: The Icom IC-706MkIIG.

That's it for this month. I hope this helps those of you about to embark on a first HF rig purchase. Don't forget there is always a wealth of knowledge to be found in the local radio club, and it's usually just a matter of asking.

Some further sources of manuals

Kenwood - *http://hamradioindia.com/html/kwdman.htm*

Icom - *http://www.hamradioindia.com/html/icom.htm*

Yaesu - *http://www.foxtango.org/ft-library/FT-Library/index.htm*

References

1. *http://www.rigpix.com/*
2. *http://www.mods.dk/*

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Aerial Analyser modifications for 2200 and 630 metres

Justin Giles-Clark, VK7TW - vk7tw@wia.org.au

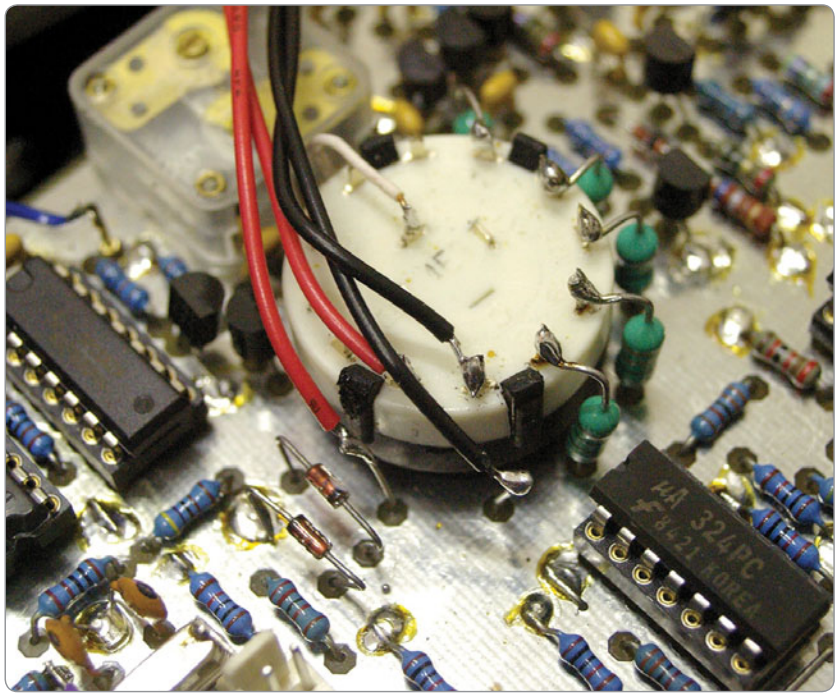


Photo 1: Additional inductor positions next to the rotary switch.

Like many amateurs in Australia and around the world I built the Jim Tregellas VK5JST HF Aerial Analyser when it was released and have been using it to build and tune HF antennas ever since.

Recently we were granted 137 kHz (2200 m) and 470 kHz (630 m) operating privileges in Australia and I am currently experimenting on these bands. Unfortunately the lowest frequency that the original design goes down to is only 1.3 MHz. With the simple addition of two additional inductors and some capacitor changes you can take the Aerial Analyser down to cover these two new bands.

For coverage of the 630 m band you will need a 1.5 mH inductor and for the 2200 m band you will need one of 12 mH. There are already two additional inductor positions on the printed circuit board (PCB).

You will have to unsolder the rotary switch and unscrew it off the PCB to move the rotary ring stop to add two positions to the switch. Once two more positions are available the rotary switch can be mounted back on the PCB and the inductors resoldered. Whilst you have the PCB unmounted you will need to change three 1 nF ceramic capacitors to 10 nF ceramic capacitors.The larger capacitors prevent RF at these frequencies from finding its way into the microprocessor and causing a flickering display. A big thank you to Jim VK5JST for suggesting this modification.

If the additional inductors are physically small they can be mounted on the PCB like the other inductors; however, the ones I found in the junk box were relatively large and I hot melt glued these to the case and connected via wire leads.

These two new inductors provide the following coverage dependent on inductor tolerances:

Inductance	630 m coverage	2200 m coverage
~1.5 mH	~0.350-0.720 MHz	
~12 mH		~0.126-0.223 MHz

Photo 2: The three ceramic capacitors to change.

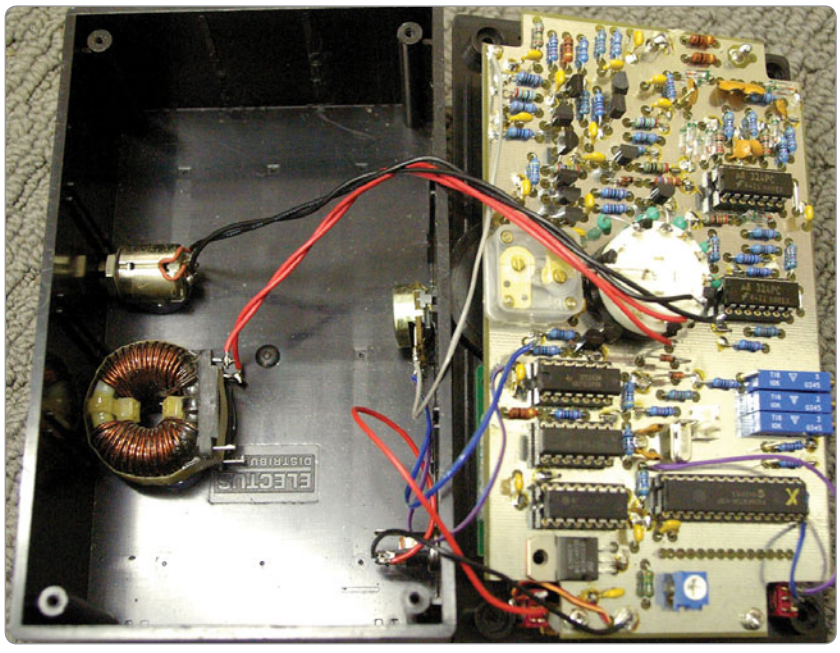
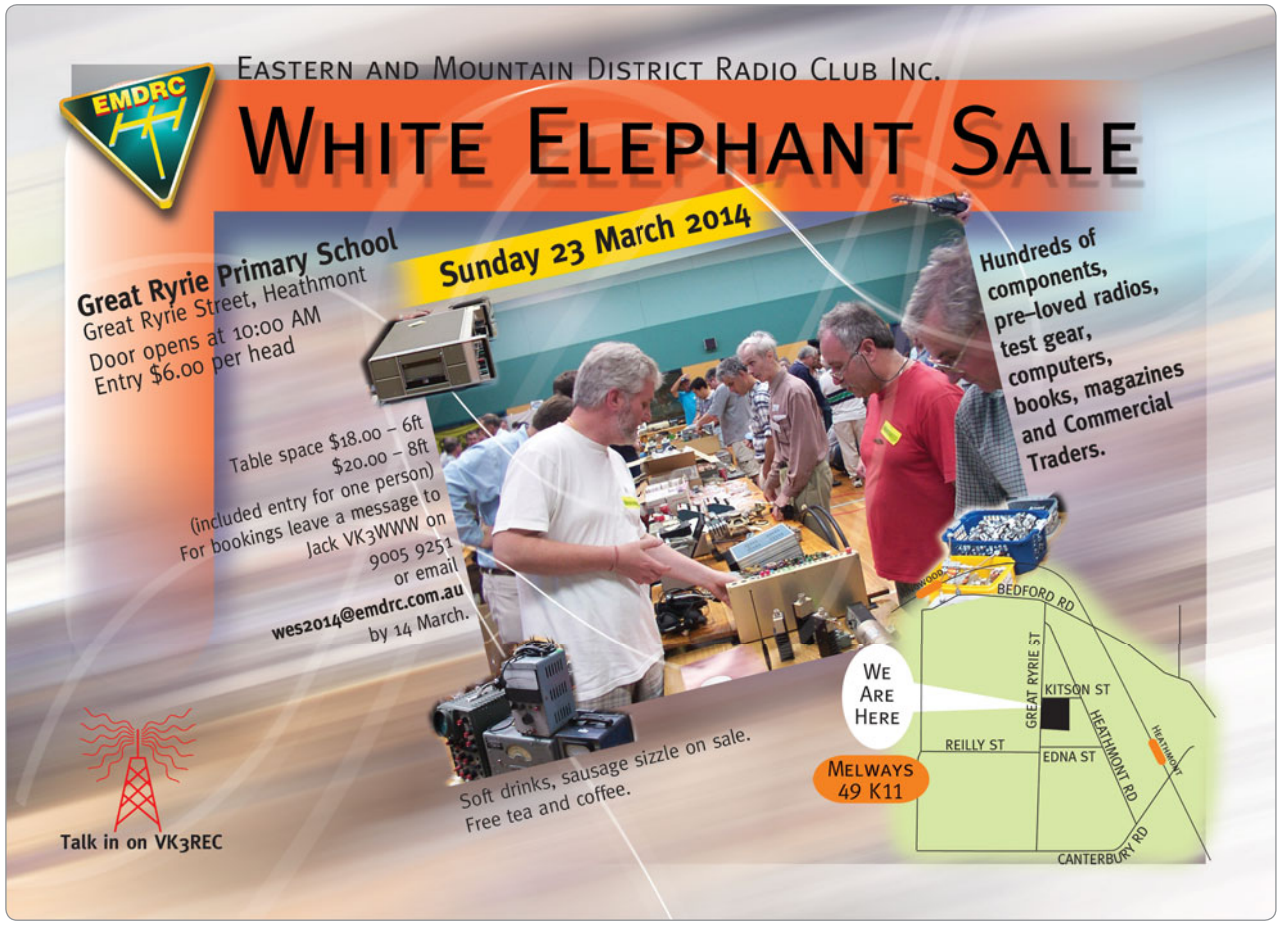


Photo 3: Additional inductor mounting.

Photo 4: Additional switch positions on the front panel.

A big thank you to Jim VK5JST for his suggestions and for a fantastic tool which now gets even more use in the MF and LF equipped shack. Happy experimenting and 73.



The SDR 40: A simple sound card receiver for 40 metres

Peter Parker VK3YE - www.vk3ye.com

Constructing a good general coverage receiver used to be a formidable undertaking. Few amateurs built them and kits had been rare for decades. Software defined radio technology has made the task easier and kits are once again available. However it's still desirable to start with something more modest such as a set for a single band.

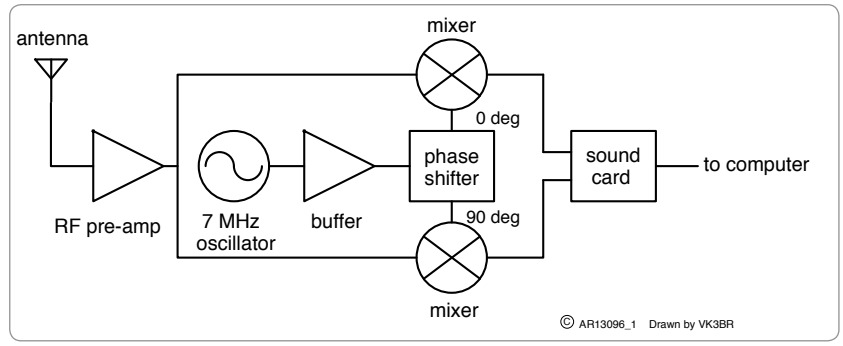


Figure 1: The block diagram.

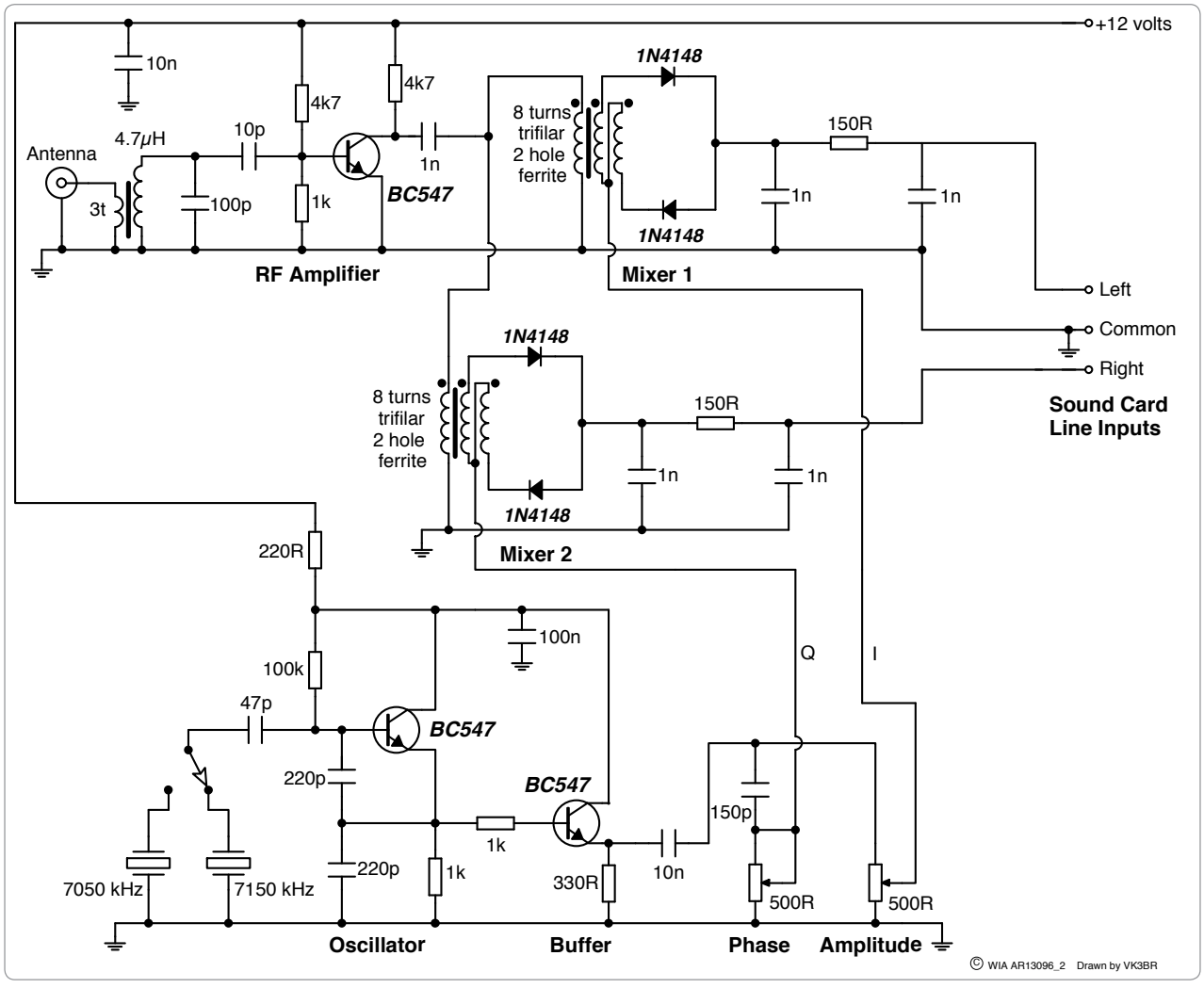


Figure 2: The schematic diagram.

Described is a simple front end with IQ outputs. In conjunction with a high quality sound card it allows reception of one or more 96 kHz segments of the 7 MHz band. It only uses readily-available discrete components and no surface mount parts are involved. Because most of the smarts are in the software, performance is out of proportion to its complexity and construction should take less than two hours.

How it works

Incoming signals negotiate a tuned circuit and are amplified by a NPN transistor stage. They are then fed to two identical diode mixers that are fed with different signals from the local oscillator. As a consequence the local oscillator outputs are also different and are fed to a stereo sound card for processing by the computer.

The transistor local oscillator operates in the centre of the desired tuning range (or the frequency of an available crystal). Another transistor buffers its output. This is fed to and split in a phase shift network comprising a capacitor and two trimpots.

The setting of these trimpots, labelled Phase and Amplitude, is critical and there is some interaction between them. When the phase trimpot is adjusted to match the 150 pF capacitor's reactance at 7 MHz (approximately 150 ohms) and the amplitude trimpot is set correctly the result is two local oscillator outputs of equal amplitude but 90 degrees in phase different from one another. These are often known as I and Q, or 'in-phase' and 'quadrature'.

The I output goes to one mixer while the Q output goes to the other. The output from the mixers will, like the oscillator's outputs, be similar but phase shifted by 90 degrees. The mixers' in-phase and quadrature outputs (between 0 and 48 kHz) go to a stereo sound card for processing by the radio software.

Feeding I-Q outputs to a stereo sound card is a bit like seeing with two eyes instead of one or hearing with two ears instead of one. The information arriving at each sensor is slightly different. Certain things can be discerned with two that cannot be with one.

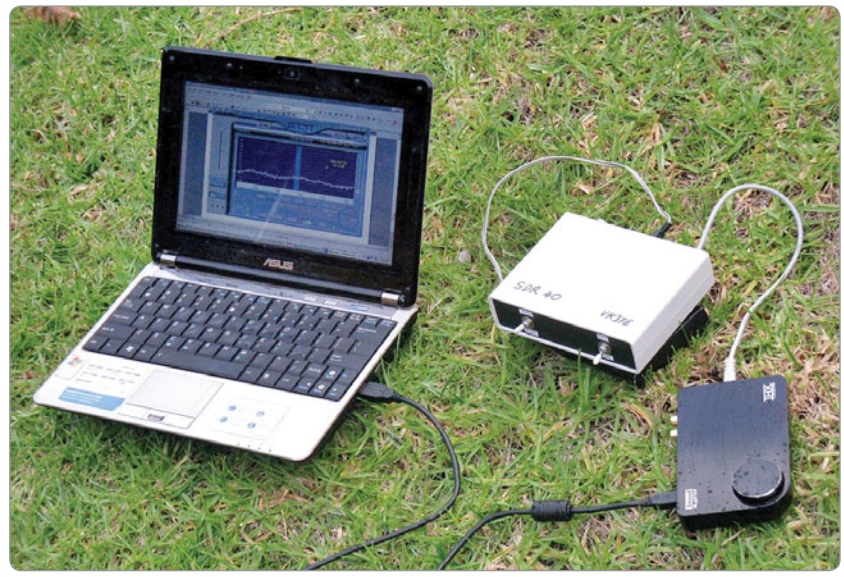


Photo 1: The receiver with the external Sound Blaster X-Fi Surround 5.1 Pro soundcard.

In this case it's the relationship between incoming signals above the centre frequency and those below it. A simple mixer will generate a 10 kHz difference signal regardless of whether one of its inputs is 10 kHz above or below a fixed local oscillator frequency. Which means that if there are input signals above and below (as could be the case for a receiver mixer tuned to a busy band), the output will contain a babble of both. You wouldn't be able to tell which was which if you used a single product detector and audio amplifier as per a simple direct conversion receiver.

That is unless you move the local oscillator slightly in frequency. Signals in the direction you are tuning towards drop in pitch while those you're tuning away from rise in pitch. Hence adjusting the local oscillator up in frequency will cause signals above it to drop in pitch while signals that are lower in frequency than the local oscillator will rise in pitch as you tune away.

Knowing this doesn't help much when trying to discern a signal in a crowded band on a simple direct conversion receiver (or crude SDR). However imagine that it was possible to hear only those signals that dropped in pitch when you tuned towards them. Those signals that rose in pitch would not be audible. As a result you'd only hear signals above the local oscillator's frequency while those below would be rejected. Hence single signal reception would be achieved without an additional frequency conversion and use of a narrow crystal filter.

It would be even better if this could be done without retuning the local oscillator (which would detune the signal if receiving SSB). As it happens, this is possible thanks to the phase difference between signals above and below the local oscillator. The human ear cannot detect these but a stereo soundcard with SDR software can, provided that different I and Q signals are fed to its inputs. We ensure this difference through the use of two product detectors each fed with equal amplitude but phase shifted local oscillator signals as discussed before.

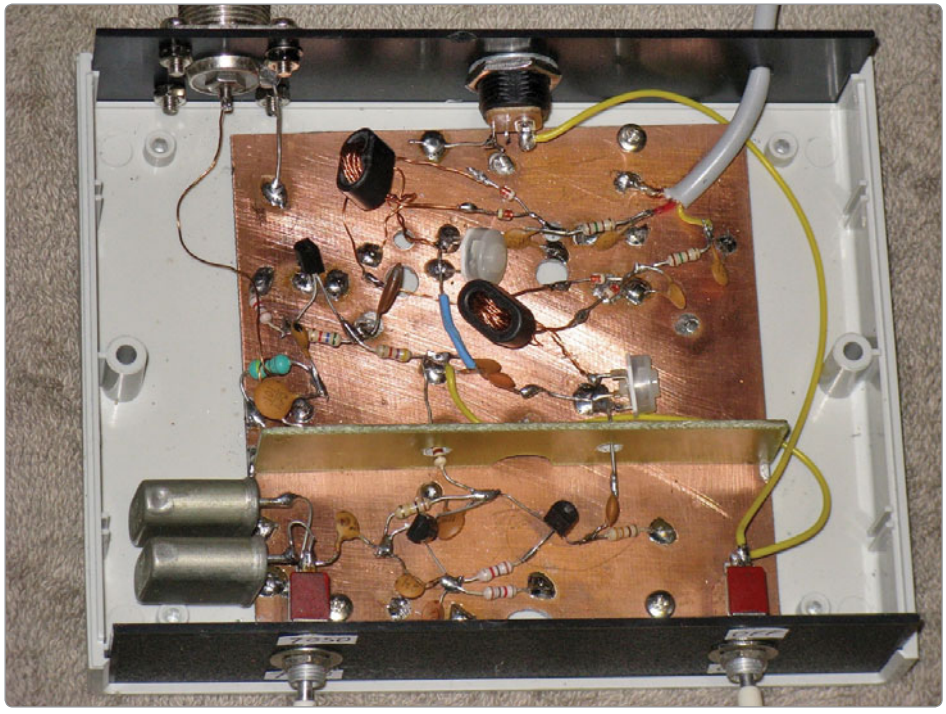


Photo 2: Inside the receiver.

Software

Various SDR programs can be freely downloaded off the web.
I use SDRadio by I2PHD. Features include a spectrum scope, frequency display, s-meter, variable gain, variable bandwidth and noise limiter.

Depending on your computer's speed it can be set to 48 kHz sampling (able to tune 24 kHz above and below the centre frequency) or 96 kHz (+/- 48 kHz range). Try a lower sampling rate if the sound output starts to break up.

Sound card

A sound card with stereo line inputs is essential. Otherwise it will not be possible to suppress unwanted signals and all transmissions will appear twice, potentially interfering with the reception of others.

The sound card also needs to be a low noise type. Otherwise receiver sensitivity will be poor and signals will not sound as clean as they should be.

Use an external USB-powered sound card if the one in your computer does not meet these requirements. I suggest a mid-priced unit such as the Sound Blaster X-Fi Surround 5.1 Pro pictured in Photo 1 below. This costs around $60 from specialist computer retailers.

Construction

The prototype was built onto a piece of blank printed circuit board material, refer Photo 2. As with all RF circuits, avoid construction methods (for example, with Veroboard) prone to high stray capacitances.

A commonly available 7.159 MHz crystal is suggested for testing. This has the bonus of making the oscillator useful for an SDR covering a useful segment of 40 metres, 7.111 to 7.207 MHz if using 96 kHz sampling. Crystals for other frequencies such as 7.030, 7.040 or 7.122 MHz are cheaply available from overseas suppliers and will cover the lower part of the band.

If you only had to have one crystal, I would suggest 7.122 MHz for SSB or 7.040 MHz for CW as best able to cover most band activity. The prototype's use of switched 7.050 and 7.150 MHz crystals is also good except for a small gap around 7.1 MHz. Another approach is to use a 7.2 MHz ceramic resonator pulled down to approximately 7.1 MHz, though this will be less stable.

Build and test the oscillator and buffer stages first. Leads should be kept short. There should be shielding between it and other stages. A partition made of circuit board material was used here though a separate box would have been better.

Set the phase and amplitude trimpots to half travel for now. You should be rewarded with a carrier on or very near the crystal frequency. Its precise value is not critical unless you want a round number to enter into the software as the centre frequency.

Next build the two identical mixers. The hardest part in these to get right is the trifilar (that is, three wires twisted together) coil which is wound on a two-hole TV balun former. Available in short or long sizes these have holes approximately four mm in diameter and look like miniature binoculars.

A good way to twist the wires is to take three pieces of enamelled copper wire (approximately 0.3 to 0.4 mm diameter such as from an old power transformer) and twist them together in the chuck of a hand drill. The other end of the wires, which are about 20 or 30 cm long, can be held with pliers. Stop twisting when there are about two or three twists per centimetre.

Wind eight turns (not critical) onto the two-hole ferrite former, with each turn comprising a pass through each hole. Once done it should not be possible to easily fit very many more turns on.

The black dots on the circuit diagram signify one side of each coil. You will notice that one side of one of the three wires goes to the other

side of another wire. These two coils connect to the 1N4148 diodes in the mixer. The free coil is the primary, connected to the RF amplifier. The other mixer connections are the local oscillator inputs from the phase splitter and the outputs that go into the sound card.

Next is the RF amplifier which boosts signals to a sufficient strength to be handled by the mixers. Selectivity is provided by the tuned circuit formed by the 4.7 µH RF choke and the 100 pF capacitor. Then wind three turns of thin enamelled copper wire over the body of this choke for the antenna connection. The same wire as used for the mixer transformers will suffice. Construction is straightforward but again keep wires short.

Testing and adjustment

Connect the sound card and load your chosen SDR software. A speaker or headphones should be connected as well.

Connect the receiver to the sound card line input socket via a 3.5 mm stereo plug. Choosing the line input connection is important; while the microphone input offers higher gain it is often mono so is unsuitable for a single-signal SDR. Set the sampling rate in the software to either 48 or 96 kHz and the centre frequency to your crystal's frequency.

Connecting 12 volt power plus a good external antenna should result in reception of noise, as shown by the spectrum display leaping up. If there are peaks on the display try tuning them in with the mouse as signals. A thin line will be a carrier signal while a signal with a broad but uneven peak may be an SSB signal that should be tunable. The display should indicate frequency across the bottom while the vertical scale, for signal strength, is marked in decibels.

If the oscillator's outputs have not been adjusted for a 90 degree phase difference you'll see the same signals above the centre frequency as below it, like a mirror image. For instance a LSB voice transmission on 7.169 MHz will appear on 7.149 MHz, tunable as a USB signal, assuming a 7.159 MHz local oscillator centre frequency. Try tuning in signals, flipping between USB and LSB until a signal is intelligible. Then go over to the opposite sideband and try to resolve the same transmission on the other side of the centre frequency.

The same effect occurs with a locally generated carrier signal that is set 10 or 20 kHz from the centre frequency. Unlike an SSB voice signal this is a stable level more useful when aligning the phase and amplitude trimpots. An RF signal generator or nearby HF transceiver keyed into a dummy load provides the required test carrier.

Adjust both trimpots while watching the bars either side of the centre frequency. They will mostly be the same height but eventually one will be shorter than the other (it doesn't matter which one) at certain settings. Carefully adjust both trimpots for maximum height difference. It may also be helpful to listen as well as look; do this by putting the cursor near the shortest bar so there is a beat tone of approximately 1 kHz and adjust for lowest volume.

There will be some interaction between the two controls but with careful adjustment you'll be able to obtain a null so that the unwanted bar is 30 or more decibels below the wanted signal. The unwanted signal will then be just 1/1000 the strength of the desired signal (that is, the taller bar), providing a useful degree of rejection. Achieving significant rejection demonstrates that the local oscillator chain is correctly producing two outputs exactly 90 degrees phase shifted.

Finally note the frequency of the tallest signal on the spectrum display. With any luck it will be the same as that shown on the signal generator or transceiver. If not then you're I and Q connections are reversed. Either reverse the soundcard's inputs or use the software's 'swap I-Q' function to do this electronically. It should then be possible to resolve signals on the correct frequency with the correct sideband set.

Conclusion

A basic sound card receiver has been described. It is cheap to build, uses few parts yet performs well. Apart from its use as a receiver, the stages described should be suitable for a wide range of SDR, binaural receiver and phasing transmitter experiments.

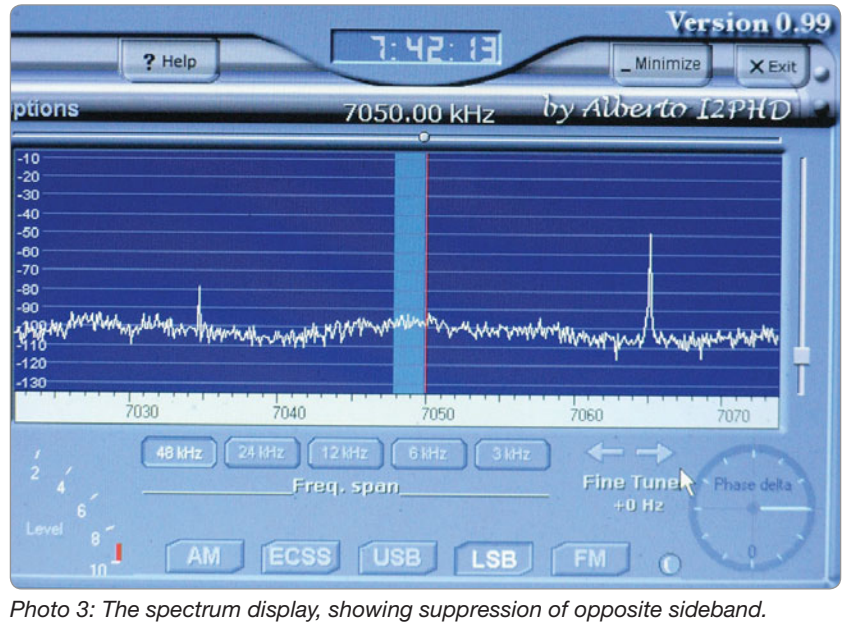


Photo 3: The spectrum display, showing suppression of opposite sideband.

New 630 metre band beacon in Mildura

Jim Linton VK3PC

Listen for the beacon signal at 473 kHz on the new 630 metre band from Mildura in north-western Victoria, which is on the cross roads with Adelaide, Sydney and Melbourne - reception reports being most welcome. It has been built by Noel Ferguson VK3FI on a proven design, modified slightly in component lay-out, and well soak-tested using a dummy load on the work bench.

The band 472 to 479 kHz was in the Australian Radio Frequency Plan on January 1, 2013 issued by the Australia Media and Communications Authority (ACMA). The 7 kHz wide secondary allocation was decided by the World Radiocommunication Conference in 2012 (WRC12). When the band officially arrived, it is believed the first on was Drew Diamond VK3XU calling CQ on CW, then came Grant Taylor VK3HP on SSB, with the two having a cross-mode contact on 476 kHz.

As with the previous homebrew VK3FI transmitters, it was carefully built on boards that were fully tested at each stage, before being put together. The final stage uses a pair of 20N60C3 transistors in a Class D, push pull configuration.

Noel VK3FI said, *'The transmitter RF stages and output filter are based on the VK3XU tried and proven circuit, but with changes to accommodate available components such as the power supply transformer that was on hand and the use of homebrew printed circuit boards.'*

'Another design departure was that instead of the use of a crystal to control the Variable Frequency Oscillator (VFO), a Direct Digital Synthesiser (DDS) was assembled from a kit by ***www.ozQRP.com*** *that needed an amplifier to increase its output to 300 millivolts.'*

Noel VK3FI tuning the 630 metre transmitter.

'The VFO runs on 4.72 to 4.79 MHz, which is then divided by ten to provide a very stable signal on 630 metres.'

He said tests settled on 473 kHz as that frequency has been suggested in an effort to fit in with the existing band usage.

'The transmitter feeds a basic inverted L-antenna, with the earth cross connected to the main mast plus seven radials and some 27 earth stakes. Thanks go to Graham Kenny VK3FTEC for assistance with the antenna installation,' said Noel VK3FI.

The vertical section is 16 metres with a horizontal top loading consisting of two parallel wires, one metre apart, 31 metres long. A tuning/matching coil is located at the ground end of the vertical.

'Hopefully the signal will prove to be a target for those on the band, and may see others joining in to test propagation and even transmit,' Noel said.

The band has been allocated by the ACMA under restrictions in the Licence Conditions Determination. In the lead up to the WRC12 decision a few countries allowed the use of the spectrum under experimental licenses. It has seen a return of radio amateurs to the medium waves in about a dozen countries where spectrum had not been available to them since the earliest days of radio.

Keying of the new beacon is presently as a series of the letter V de VK3FI VK3FI VK3FI Mildura, followed by 20 seconds of carrier.

Its operation will be on a part time basis with VK3FI on site, but the transmissions will initially be made widely known. Reception reports by email to *vk3fi@wia.org.au* will be appreciated.

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- Introduction of the Foundation licence
- Removal of Morse code test for HF band operation
- New frequency allocations: 80 metre DX window; 136 kHz; 475 kHz
- Gained more operating modes and technologies
- Unique callsigns and prefixes for special occasions
- Ensuring our privileges are aligned internationally

Protecting Our Spectrum

- Retained continuing access to the 70 cm band
- Acting to have intruders removed from our bands
- Opposing interference threats from technologies such as BPL

Licence Exams and Certificates

- Organising and administering licence exams
- Training and qualifying exam assessors
- Your Certificate of Proficiency – issued by the WIA

Callsigns

- Passed your exam? We have a callsign for you!
- Want a new callsign? We can arrange that!

National News Service

- Keep up-to-date
- Weekly broadcasts – 30 minutes of national news
- Also online in text and audio
- Website news bulletins - reported "as it happens"

WIA Around the World

The work of the WIA extends beyond Australia's borders.

The Institute is a member of the **International Amateur Radio Union** (IARU), which advocates and represents amateurs' interests to the **International Telecommunications Union** and at the important **World Radio Conferences**. Nations around the world attend these Conferences, held every few years, to determine global radio regulations and frequency allocations. Australian amateur radio bands are allocated from these global decisions.

The WIA is involved in Australia's preparations for the World Radio Conferences and attends with the Australian delegation. Institute volunteers do this work. WIA attendance is funded by the Institute on behalf of all Australian radio amateurs.

- **Time to renew your membership? Look over the list again.**
- Renew online: ***https://wiamembers.memnet.com.au/Default.aspx***
- **Encourage a friend to join.**
- **Show them this – and then send them to: www.wia.org.au/joinwia/wia/onlinejoin/**
- **Or call (03) 9729 0400 (10 am to 4 pm, Mon. to Fri.)**

The Wireless Institute of Australia

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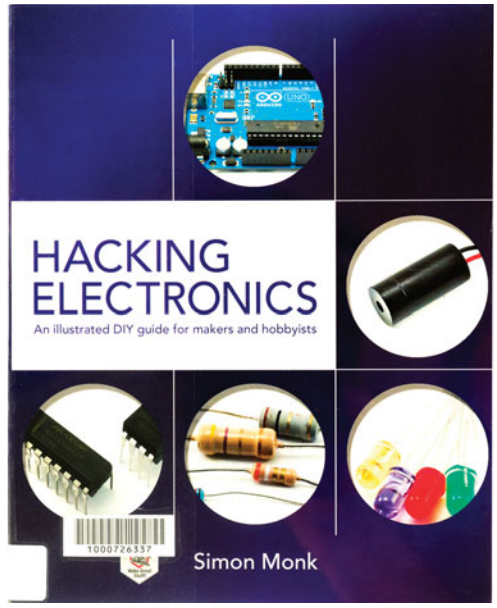
Hacking Electronics

An illustrated DIY Guide for Makers and Hobbyists
Simon Monk, McGraw Hill (Education), 2013, ISBN: 978-0-07-180236-9

Reviewed by Blair Bowler VK4BBX

Hacking Electronics is a newly released, modern, and inexpensive 'how to' electronics workbook. The rather abrasive word 'hacking' might suggest many things to different people, however, in this 275 page paperback it means, practical teaching by doing. Each topic features easy-to-follow projects. You don't need a degree in engineering to create or modify something electronic. Traditional electronic textbooks can be terrifying, unless one has a good grounding in complex mathematics. This easy to read intuitive guide teaches about micro-controllers, sensors, FM transmitters, working with modules, and other simple to construct devices. *Hacking Electronics* is a full-colour exceptional publication, organised into 11 chapters, a Parts Appendix, and a very informative index. Perhaps the following brief description of each chapter will provide a useful summary of the book's content.



The cover of 'Hacking Electronics'.

Chapter 1
Getting started. This instructional book starts with advice on where to buy equipment and components. This first chapter also deals with the basics of soldering and describes how to use an old computer fan to make a fume extractor for use while soldering.

Chapter 2
Theory and practice. This particular chapter identifies and explains the variety and use of electronic components. It also introduces a small amount of helpful and essential theory.

Chapter 3
Basic Hacks. This chapter introduces transistors with example projects. It includes a 'push light' which automatically turns on at night, and 'how to' control a motor, using power MOSFETs.

Chapter 4
LEDs. Besides discussing regular LEDs, 'how to' use them, and making them flash, and so on. This chapter also looks at using constant current drivers for LEDs and laser diode modules.

Chapter 5
Batteries and power. The focal point in this chapter turns to batteries, both single use and rechargeable. It shows 'how to' charge lead-acid, NiMH, and lithium polymer batteries. Automatic battery back-up, voltage regulation, and solar-panel charging circuits are also included here.

Chapter 6
Hacking Arduino. The Arduino has become the popular low-cost micro-controller board of choice for global electronic enthusiasts. Micro-controllers are essentially low-powered computers, on a chip. The open-source hardware design makes using such a complex device very simple. The chapter begins with the Arduino, and includes a few simple how to applications, like controlling a relay, playing sounds, and controlling servo motors. Readers are also introduced to the large range of available plug-in shields, all of which have added greatly to the success of the Arduino board.

Chapter 7
Hacking with modules. Modules exist for all types of things, from wireless remotes to motor drivers. When constructing something, there is often a ready-made module available to use, for at least some part of the project.

Chapter 8
Hacking with sensors. Sensor ICs and modules are available for sensing everything from gas to acceleration. This chapter explores and explains how to use a range of sensors, which includes connecting some of them to the Arduino micro-controller board.

Chapter 9
Audio hacks. This chapter has a number of excellent 'how to' designs, all relating to electronics and sound. It includes making and adapting audio leads, audio amplifiers, and the use of microphones.

Chapter 10
Mending and breaking electronics. Mending and scavenging useful parts from dead electronic equipment can be a worthy activity. This chapter explains 'how to' take things apart, and sometimes put them back together again.

Chapter 11
Tools. The final chapter is a basic reference and explanation about 'how to' use and get the most out of tools, such as multimeters and laboratory power supplies.

Hacking Electronics is indeed a superb 'how to' electronics book, highly recommended for all makers and hobbyists, who will no doubt enjoy the full-colour illustrations, and the do-it-yourself guides. There is a great feeling of personal satisfaction in building something physical, or modifying a device of your own choosing. Be warned, however, once you start reading this brightly presented new release electronics manual, you might find it difficult to put down.

Spotlight on **SWLing**

Robin Harwood VK7RH
e *vk7rh@wia.org.au*

Summer has officially ended and propagation has been steadily altering. On the 30th of March, most HF broadcasters will be changing their schedules because of these seasonal propagation changes. Sadly it is also when further cuts to services will happen with some permanently leaving HF. For many decades, the BBC World Service has had a relay site in the Seychelles, an island group in the Indian Ocean, just off the Kenyan and Somali coast. Senders will be switched off yet programs for the region will continue from other sites. I believe that further programming cuts are also planned for that date.

In January, The Voice of Russia did indeed make substantial cuts to their shortwave output. I did hear the VOR continue broadcasting to Australasia on 21800, from Irkutsk. However, although the carrier is loud, I found the modulation was nowhere near as good as it was when Moscow had such a dominating presence on shortwave. Also, on the 9th of January, further cuts were made to the domestic Radio Rossi network. This had been carried over long, medium and shortwaves and the entire longwave network was decommissioned simultaneously and some medium wave outlets also were reduced. All shortwave relays of this domestic Russian language network also vanished. Apparently this network will continue over FM within Russia and other CIS states.

I do most of my online monitoring from the University of Twente software defined receiver (SDR). Many of us started out on the Globaltuners website with receivers strategically located throughout the world. However I personally prefer using SDR as it is ideal for monitoring. Perhaps I will get one here. For example, listening across 75/80 metres, I have encountered numerous Russian speaking hams around 0300 to 0500 UTC as well as plenty of Russian and Ukrainian operators on the key.

I have also been tuning around on my ageing Icom IC-R70, especially late in the evening hours, and have heard some familiar voices from the past. There was Colin VK3LO together with Laurie VK3AW chatting about the good old days. It did remind me of that nostalgia format that was on the commercial station 3AW, when it was on 1278 kHz! I also picked up my ears when I overheard some retired operators from the military/public service chat about receivers that they utilised in professional monitoring some decades back. They stated that by the time they were disposed of, they were somewhat deaf after being on continuously for so long.

I still have memories of the first occasion I was able to use an AR7. It was at the QTH of a friend who worked some 50 years back at Launceston Airport. I heard signals that were not audible on a dual wave mantel set and was drooling. About 30 years later, I was operating Racal receivers at a secure monitoring facility and then dreamed of possessing one of these. However technology has advanced, and the Racal and AR7s are now museum pieces. Shortwave itself is not as crowded or as hectic as it was then. I am now able to monitor receivers via the internet; hearing signals that are impossible to hear locally. I also suspect that professionals are doing likewise.

Now there are two of us here in this retirement village. Another Oldtimer has moved in recently and we are already sharing ideas on how to erect stealth antennas and perhaps do some operating. It has certainly revived my interest in getting a decent outside receiving antenna. I am still hoping that eventually NBN will arrive in this suburb because it is available at my former QTH. Some have mooted using a remote station controlled by computer yet legally it is a murky area. I think it is safer operating from my local club, VK7TAZ, as they have coffee mornings on Fridays and Mondays and get out there one day on the key.

Amateur radio promotion

Kevin Crockett VK3CKC

Opportunities to showcase amateur radio to the public come up from time to time. Sometimes they find you and others you will have to find for yourself and seize the opportunity to do something. Many opportunities appear at least a day after you could have done something about it. However, there are many things that can achieve more hits than misses – both regarding opportunities and also what you do on the day. If you want to promote amateur radio, you must be ready at a moment's notice to take advantage. Here are some hints.

There are two different approaches: *Create your own opportunities* or *use someone else's.*

Creating your own

If you want to maximize pre-event exposure for your showcase, you must advertise. Problem: *Where do you advertise?* Solution: *Wherever you want to.*

Most communities have commercial or community radio and/or TV stations, councils have community billboards on their web sites, there are free newspapers, etc., etc., but you have to get your message to them. What's the easiest way of doing that?

Most of the media mentioned above require content for their existence. Many will run a story if they see value in it. A now well-practiced method in the Bendigo area is to create what is termed a Media Release or Community Service Announcement. This is only a point listing email that shows, under specific headings.

What is happening:
When:
Where:
Cost:
Contact:

This is followed by a few short, maybe single sentence paragraphs with a few general details and a statement about whom to contact to arrange interviews and rounding off with the person/organisation sending the information.

Now, to whom do you send it? You start an ever-increasing list of email addresses associated with media, community information outlets or potentially interested persons/organizations in your area. As time goes by, you will add more addresses as you discover them. Advertising then becomes a matter of effectively sending just one email whenever an event presents. You will be surprised where it appears as recipients of your email associate it with other contacts of which you are unaware. Most newspapers have local versions around the countryside and your information can appear well out of town. The same goes for community web sites.

Believe me, it works and the process can be used for anything – including Club speaker nights, etc.

That's the first part of the job done. If you are lucky, you might get a phone call from a radio station or a newspaper requesting an interview. You might even be called into a studio or the interview might be conducted in real time via telephone. Then again, you may hear nothing but then be surprised when a newspaper or TV representative turns up on the day with camera and notepad.

The more unusual – either by location or activity type – your event is, the more interest it may generate. It may also have an impact on your advertising. A YouTube video of a unique event can be seen at *http://www.youtube.com/watch?v=wdXqf26cYaw&feature=youtu.be* This was an amateur radio equipped trike ride to a local market on the O'Keefe Rail Trail. Having 'leaked' plans to the right people, it resulted in an invitation to provide a pre-event talk and later being asked if it could take place on market day. The ride was a curtain raiser for a larger event still planned for the future. A club display was set up at the market with appropriate transceivers and APRS progress was displayed on a laptop. Planning was considerable and many things were learned.

If amateur radio is to flourish into the future and always have a flow of newcomers to the hobby, it must be publicly visible. Unlike tennis players, you don't have to go and find a tennis court on which to play. You can do it all from the comfort of your lounge chair. Nobody sees you and only a few of those already in the hobby know what you are doing. The general public remains ignorant. That needs to change.

Using someone else's event

This part is easy. You need to ensure that whoever is running the event knows about your desire to make their event even better. You need to keep your ears and eyes open and keep in touch with where advertising for such things appear – and be ready when it does appear.

Having been involved in many amateur radio publicity/promotion events – town hall, fire station, parks, markets, WIA National Field Days, amateur radio equipped trike ride to a local market (more on that to come in the future), National FunFlight Day, regular public information and training, etc. - it has become obvious to me that just providing information will not result in success. In order to really succeed, it is necessary to be seen doing amateur radio things in public and, if you can, involve the public themselves in doing it – and doing it often. Field Days out of the public eye do not cut it.

An ARRL comment I saw a year or two ago said that anyone with reasonable intelligence could study, gain a licence, then do the same things as we do. A couple of questions that may be posed are, 'Why would they want to?' and 'What would they get out of it?' You

should concentrate on providing the answers to those questions with your event. You may then be able to catch their attention and perhaps awaken an otherwise unstirred interest in why we are 'into' amateur radio. Showing heaps of technical stuff just highlights the technical side of the hobby and confuses those without the same knowledge. Showing the fun, education, skills, social and other aspects of the hobby gives them possible reasons as to why they should bother to give it a go.

Some people may come up and ask questions about what they are seeing as they walk past. Most will not. Some of our activities will seem too technical and, rather than appear silly, stupid or even ignorant, most people will just keep walking by and any question they may have considered asking is gone before the event has even ended. A potential newcomer is missed.

How do you handle the above? The answer is in providing the answers to the questions that might occur to those walking by without them asking the question.

I used an analogy once as a guest speaker at a club meeting. I asked three questions. The following comments were only addressed much later in the presentation.

'How many of you have gone fishing?' – set up a public promotion display to attract newcomers. 'How many of you have gone without taking bait with you?' – provided nothing to attract people to come up to you and talk of their own free will. 'How many of you have let the fish off without reeling it in?' - didn't see an opportunity of drawing someone in by talking to them or making sure they go away with something of a follow-up plan.

If you can put your hand up for the last two, what is the point of going fishing? Why set up the display in the first place?

Setting up a successful display requires some planning but do you want to go through that every time you have an event? If it is an 'all your own' event, planning time is largely up to you. If it is part of someone else's event, you have no control over notification time and you can't always have enough time to do it. The secret here is to build on past experience as you learn what is required and gradually build up a 'promotion kit'. This can be grabbed at the last opportunity and put in place – things like posters, pamphlets, fold-out display boards, etc., all ready to use. A continuously looping slideshow on a laptop or other monitor can provide a lot of information without having to talk to anyone. Ideally, it should interest them in coming up and talking further. It will take a while to get a kit ready and you can't do it all at the last moment.

Care must be taken to ensure that you promote amateur radio as more than a 'technical old geezer's' hobby. It goes without saying that, in order to provide that focus, you, and the hobby, will have to get involved in more than 'technical old geezer's' activities.

Another point that comes to mind here is that any information that is provided for non-technical or non-amateurs should not contain any amateur-speak or jargon. Those who are not in the hobby will not understand it and may be put off. When it comes to on-air information, many non-amateurs have scanners these days and you never know who is listening. They also won't understand jargon or overly technical stuff.

Anyone who has participated in a 'we'll show the public what amateur radio is all about' exercise knows how difficult it can be to create and maintain a contact with non-amateur operators. It always requires someone at the 'other end' who wants to spend the time – and there is never a contact available when you really want one. The exception to this might be the usual field day type of activity when there are others out and about for the same reason.

Providing contacts can be more of a problem if your event is more unique. In this case, try and enlist other Club members to be on standby at home and, if involved, get them to try and ask questions that will not result in Yes/No answers. Young children are less imaginative and suffer from microphone shyness. You need to get them talking. Contact distance doesn't matter as it is the activity that counts.

When setting up equipment, make sure that the front panels and any display monitors are generally visible to the public. A rear panel with the brand, model and serial number does not provide a lot of educational value.

Setting up inside a gazebo or similar presents a problem. It might be best to keep the front open and set up on the back wall or probably better still on the two sides and have an inviting presence. Don't forget that if the gazebo is full of operators, there will be no room for the public to get involved. Some of those operators should be outside trying to coax people in. Remember that the purpose of the event is promotion - not socialising or operating.

A few sets of headphones and routed audio is also essential. Nobody wants to immerse themselves in unsquelched SSB audio from speakers that seem to find themselves driven harder and harder as operators try to overcome the chit chat volume that is also rising to overcome the increasing volume from the speakers. You get the idea.

You have a number of choices:

Do nothing at all and the hobby slowly shrivels up,

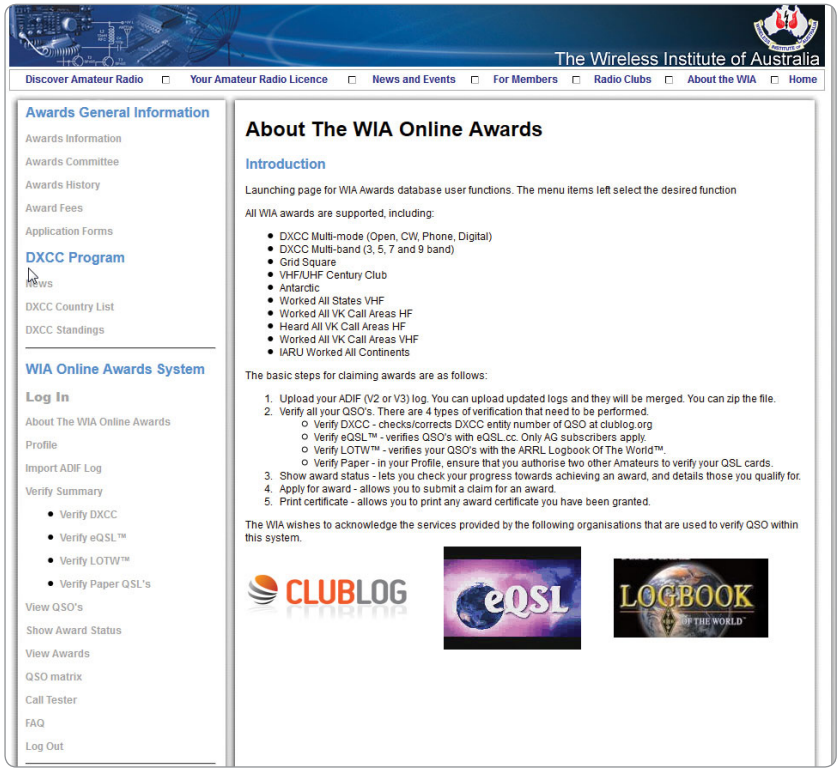
Wait until someone else is running an event and try to join them, with the risk of being turned down, or Create your own event where you are in full control and can extract the most from it.

Now here's an idea: How about interesting your Club in running one public promotion event per month for a year? If every club did that, it would make a considerable difference to public awareness.

So there you have it. My general thoughts on what is important when presenting amateur radio to the public. Early planning is essential and I must try and cover them all myself next time!

WIA online awards open for business

Marc Hillman VK3OHM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QSO matrix
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Introduction
Launching page for WIA Awards database user functions. The menu items left select the desired function
All WIA awards are supported, including:
DXCC Multi-mode (Open, CW, Phone, Digital)
DXCC Multi-band (3, 5, 7 and 9 band)
Grid Square
VHF/UHF Century Club
Antarctic
Worked All States VHF
Worked All VK Call Areas HF
Heard All VK Call Areas HF
Worked All VK Call Areas VHF
IARU Worked All Continents
The basic steps for claiming awards are as follows:
1. Upload your ADIF (V2 or V3) log. You can upload updated logs and they will be merged. You can zip the file.
2. Verify all your QSO's. There are 4 types of verification that need to be performed.
Verify DXCC - checks/corrects DXCC entity number of QSO at clublog.org
Verify eQSL™ - verifies QSO's with eQSL.cc. Only AG subscribers apply.
Verify LOTW™ - verifies your QSO's with the ARRL Logbook Of The World™.
Verify Paper - in your Profile, ensure that you authorise two other Amateurs to verify your QSL cards.
3. Show award status - lets you check your progress towards achieving an award, and details those you qualify for.
4. Apply for award - allows you to submit a claim for an award.
5. Print certificate - allows you to print any award certificate you have been granted.
The WIA wishes to acknowledge the services provided by the following organisations that are used to verify QSO within this system.
CLUBLOG
eQSL
LOGBOOK
OF THE WORLD

Figure 1: Awards system home page.

The new WIA online awards system, previewed in *AR* November 2013, has been released for general usage. It was released in mid-December, without much fanfare, to avoid a potential pile-up.

The new system is already undergoing significant usage as knowledge of it spreads by word-of-mouth. The old spreadsheet system will be supported until mid-2014 at least, but its continued operation after that time cannot be guaranteed. No longer is Excel required to claim an award.

The new system is possibly the most sophisticated amateur radio award system in the world. The user can validate their QSO by checking DXCC at ClubLog.org, and the electronic validation of eQSL and LOTW QSL. Validation of Paper QSL is also performed online. Users can easily test whether they qualify for an award (and early users are discovering that they qualify for awards of which they were unaware), and submit an application for an award with virtually 100% confidence that it will be granted.

Once granted, which only takes a matter of days typically, and no more than two weeks; the user can even print their certificate. This means a very rapid turnaround for the user, and a cost saving for the WIA as they don't need to print certificates.

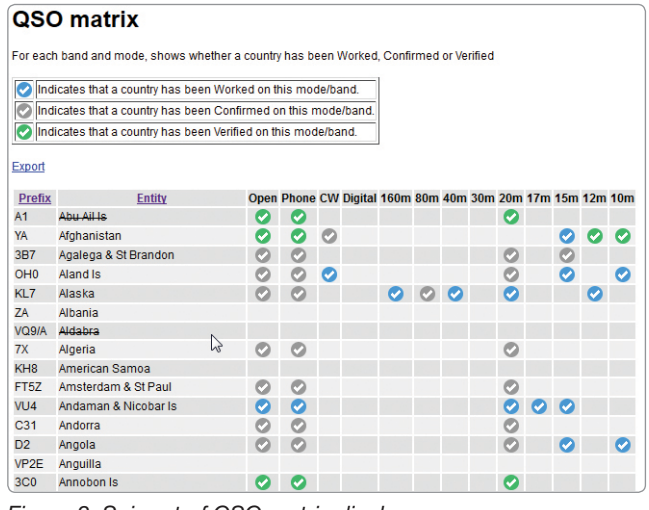
The system contains the historic register of certificates, so if you've lost that old certificate many years ago, you can reprint your certificate.

The new system is very secure, accurate, reliable and totally paperless (except for your certificate).

Upload speed has been dramatically improved by allowing the upload of zipped log files.

ClubLog have been very supportive, and have provided a bulk verify feature designed for the WIA that allows the verification of 10,000 QSO at a time - more than enough for most people.

There are features included that allow you to visualise your log. You can view all your QSO, showing what QSL you have, and you can sort on many columns. You can also display a "QSO matrix" that is a cross tabulation of DXCC entity and band/mode, showing which QSL you have. This makes a very useful wall chart for people chasing DXCC. Most displays of QSO are sortable, and exportable into either CSV or ADIF format.


QSO matrix
For each band and mode, shows whether a country has been Worked, Confirmed or Verified
Indicates that a country has been Worked on this mode/band.
Indicates that a country has been Confirmed on this mode/band.
Indicates that a country has been Verified on this mode/band.
Export

Prefix	Entity	Open	Phone	CW	Digital	160m	80m	40m	30m	20m	17m	15m	12m	10m
A1	~~Abu Ail Is~~	✓	✓							✓				
YA	Afghanistan	✓	✓	✓								✓	✓	✓
3B7	Agalega & St Brandon	✓	✓							✓		✓		
OH0	Aland Is	✓	✓	✓						✓		✓		✓
KL7	Alaska	✓	✓			✓	✓	✓		✓			✓	
ZA	Albania													
VQ9/A	~~Aldabra~~													
7X	Algeria	✓	✓							✓				
KH8	American Samoa													
FT5Z	Amsterdam & St Paul	✓	✓							✓				
VU4	Andaman & Nicobar Is	✓	✓							✓	✓	✓		
C31	Andorra	✓	✓							✓				
D2	Angola	✓	✓							✓		✓		✓
VP2E	Anguilla													
3C0	Annobon Is	✓	✓							✓				

Figure 2: Snippet of QSO matrix display.

Life is also a lot easier for the Awards Committee. Those of you involved with

the spreadsheet based system will appreciate that there was a significant amount of back and forth getting submissions correct, and this, in some cases, took months and led to a lot of frustration on both sides. The user can now make submissions in the knowledge that their submission is correct, and the committee can approve in a very timely fashion. This will save a significant amount of time for users and committee alike.

This is a very sophisticated and complex system. No software is ever entirely free of bugs, but the system has had extensive testing to date. No doubt some of you will reveal further flaws, but please be patient and they will be rectified as soon as possible. Constructive suggestions for improvements are welcome.

The new awards system is a giant step forward to a world's best *AR* awards system. It is hoped that the *AR* community find this an easy system to use, and take advantage of it by claiming any awards to which they are entitled.

Solar panels: Measuring output power

Dr Hank Prunckun VK5XB

Background

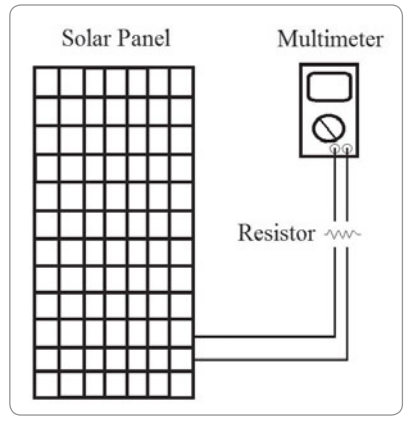
A friend who shares an interest in radios recently came into possession of a discarded solar panel. As you can probably guess, it was in a pile of junk left out for the council to take to the dump. This large panel was the type seen on rooftops that connects to an inverter and feeds the electricity grid. He pointed out some minor damage to the panel, but hoped it would be alright to use to charge a large gel cell he had in his radio shack.

He was encouraged when he connected his multimeter to the panel and read that it was putting out 18.8 volts DC. He thought that this panel might be suitable. However, when he connected it to his bench-top solar regulator, it didn't seem to keep the gel cell fully charged. He asked me to help him work out why the panel wasn't doing its job.

Problem

Although the solar panel under investigation appeared to be delivering a voltage that would indicate that it was still operating at a reasonable level of electric potential (that is, 18.8 volts), the power (in watts) was unknown. However, because it wasn't able to maintain a gel cell at full charge, it was suspected that it was operating well below the manufacturer's specifications (which were also unknown).

So, the problem to be solved was, how does one test a solar panel in order to determine the power that it is producing?



Method of recording voltage for each resistor/combination.

Theory

Ohm's Law was used to calculate the power that the panel was producing. Ohm's Law states that the current (I) is equal to voltage (E) divided by resistance (R), or I = E/R. By knowing the voltage (measured using a multimeter), and the resistance (from a set of fixed value power resistors), I was able to calculate current. Once I had a corresponding measurement for current using Ohm's Law, I could then calculate the power (in watts) by using the formula P = E x I.

Method

Equipment

To conduct the test - I needed the solar panel, a multimeter, a number of fixed value power resistors, and pencil and paper to record the results.

Procedure

I first checked that the solar panel was set up in full sun and as close to perpendicular with the sun's rays as possible. This ensured that the energy striking the panel would yield the maximum amount of energy to be converted into DC electricity.

I tested my multimeter to confirm that it was operating properly. This would be used to measure a series of test loads that would form the basis of my calculations.

Having rummaged through the boxes of electronic parts on my test bench, I located a number of different value power resistors to use for the experiment. It was important that I used power resistors as quarter-watt or even half-watt resistors would likely overheat in circuit during the test measurement phase.

I attached each resistor across the DC power leads of the solar panel as shown in Figure 1 and recorded the voltage. I started with the one Ω resistor and worked my way up to 790 Ω. As I had only a few resistors, I combined

several to create other values—this gave me more data points for my calculations. For instance, I combined a 10 Ω and a 100 Ω resistor to create a load of 110 Ω. I mixed values like this to get the combinations listed in Table 1 under the column heading of R (resistance).

After recording the voltage for each resistor/combination using this process, I used Ohm's Law to calculate the current (column I of Table 1), and then used the current to calculate the wattage (column P).

Results

Table 1 shows the results of my investigation into the solar panel's power output. It shows that as resistance increased from one Ω, the power output increased from 0.11 watts to a maximum of 3.43 watts at 66 Ω (highlighted in **bold**). However, as the load increased beyond 66 ohms, the power decreased steadily. For instance, at 790 Ω the power output was only 0.34 watts.

Discussion and Conclusion

The point at which the highest power is generated by a solar panel is known as its 'operating point.' In this case the panel's operating point was 3.43 watts at 66 Ω - this is the point at which the product of current and voltage is at its maximum.

R	E	I	P
∞	18.8	0	0
790	17.1	0.02	0.34
690	17.2	0.02	0.34
526	17.1	0.03	0.51
470	17.4	0.04	0.70
220	17.3	0.08	1.38
156	16.7	0.11	1.84
110	16.5	0.15	2.48
100	16.7	0.17	2.84
66	**14.9**	**0.23**	**3.43**
57	13.6	0.24	3.26
56	12.6	0.23	2.90
10	2.6	0.26	0.68
1	0.33	0.33	0.11

Table 1: Results of the solar panel test.

However, 3.43 watts is inadequate to charge a large gel cell battery. This was discovered by my friend who tried to use the panel for this purpose. The results of this test support his conclusion and explain why this was so (that is, inadequate wattage).

So, even though my friend thought he was getting a cheap source of DC power for his battery charging scheme, the panel was a great disappointment. Where to from here? The best option for my friend was to deliver the panel to the local recycling depot for electronic and electrical devices, and to buy a good quality panel.

If you ever find yourself in such a position, you can use this simple methodology to measure the output of your solar panels. I hope this helps!

Editor's note: From my limited experience with solar panels designed for 12 volt systems, the open circuit voltage is typically 22 volts and the voltage at the maximum power or operating point is 17-18 volts, suggesting that the panel above was much more severely damaged than it looked. Also, typical gel cells are fully charged at around 14.2 volts, so if a simple off/on regulator is used somewhat less than the panel's maximum power output will be available to charge the battery.

WARD 2014 World Amateur Radio Day

Geoff Atkinson VK3TL

This day is celebrated each year on April 18 in recognition of the anniversary of the founding of the IARU in Paris in 1925.

The primary purpose of WARD, as stated in IARU Resolution 94-3, is the need for an annual focus on amateur radio and the benefits countries and communities derive from the service.

Every year the IARU Administrative Council has attempted to select a theme both consistent with the role and purpose of amateur radio and at the same time representing a meritorious activity which, if promoted, could bring favourable credit to IARU and amateur radio generally.

At the Administrative Council meeting in September 2013, various topics were discussed and possible themes massaged. The theme "Amateur Radio: Your Gateway to Wireless Communication" was put forward by Geoff Atkinson VK3TL of Region 3 and after discussion was adopted by the Council for the forthcoming World Amateur Radio Day, April 18, 2014.

This is an opportunity for amateurs in VK to show their expertise in digital and wireless communications, to those in the community who have "wireless communication" interests, but haven't considered the association with Amateur Radio.

How the day is promoted is a matter for the individual member society and or Region. There have been many varied ways the day is recognised in scope, complexity and success.

The AC discussed when the day falls on a weekday it is more difficult to observe and promote and the opportunities are somewhat diminished.

Council approved the idea that any public relations activities or operating events could appropriately take place the weekend following April 18 in those years when the actual date fell on a weekday.

The WIA, technology and the challenge of change

Phil Wait VK2ASD and Roger Harrison VK2ZRH

Your WIA needs you! This article prefaces a comprehensive membership survey that is important to the on-going existence and development of the Institute. The WIA faces challenging financial and operational imperatives that necessitate changing the way we do things.

Considering this, the WIA Board has taken two key decisions – to raise membership fees from 1 July 2014 and to provide a digital edition of *AR* magazine from the July issue, in addition to the printed magazine. In the meantime, the Board needs a snapshot of your demographics, interests and views.

The financial imperative

The Objects of the WIA, specified in our Constitution, are broadly to educate and encourage new radio amateurs, be an effective advocate for amateur radio nationally and internationally, to protect and enhance the operating privileges for radio amateurs, and to provide relevant services to members.

At the time of formation of the National WIA in 2004, the fee structure was set to the lowest fee charged by any of the then seven divisions, so that no members would be disadvantaged on becoming a member of the National WIA. The Institute operated at a small profit in the years following nationalisation, and increased membership fees in 2011 to maintain that financial position in the face of rising costs.

In the past two years the Institute has suffered trading losses, mainly due to falling sales revenue and increasing costs, especially in relation to *AR* magazine's declining advertising sales revenue and its increasing printing and distribution costs.

The situation is not serious, as the WIA has ample financial reserves. But, in order to properly represent the long-term interests of members and the Australian amateur radio community, especially in the rapidly changing technological and regulatory environments we face, and to continue providing the many services we do, the WIA's trading position needs to be restored.

In the face of these circumstances, as announced above, the WIA Board recently took two key decisions – to raise membership fees from 1 July 2014 and to provide a digital edition of *AR* magazine from the July issue in addition to the print edition, for the time being. The details are set out in the breakout panel on page 30.

Unlike Norman Lindsay's famous "Magic Pudding", which you can cut and come again forever, the WIA's resources are finite, and doing nothing – continuing with "business as usual" – was not an option.

Here's an outline of how the Board arrived at these decisions and the reasons for undertaking the membership survey.

Opportunities for cost savings

The WIA has already achieved savings over 2013, especially in relation to Directors' Board meetings, which are now held monthly by teleconference rather than the much more expensive quarterly face-to-face meetings. The Institute has subscribed to the GoToMeeting service, which cost $480 last year *(gotomeeting.com.au)*. This has proved both convenient and beneficial. Monthly teleconferences, rather than quarterly face-to-face meetings, have helped the Board to enact WIA business faster and more efficiently.

The Club Grants Scheme has been postponed until further notice, a further saving of about $6000 per year. It would be good to return to a situation where the Scheme could be restored.

There may be other small areas of saving, but these are incremental at best and, even when taken together, would not make the adjustment required without seriously cutting back on important functions like our international representation at the ITU and the IARU – a very slippery slope to follow after building and maintaining a strong profile internationally over many decades, which has established the Institute as a key player in many influential policy areas of global radio communications administration. For example, led by the advocacy of the late Michael Owen VK3KI, and backed by the IARU, the Morse qualification for HF band access was dropped by administrations the world over and new "Foundation" licences emerged over the early-2000s, moves that are still progressing across the globe. Internationally, the WIA was involved in the introduction of the WARC bands more than 30 years ago, as well as the 136 kHz and 472 kHz bands more recently. For the past few years, the Institute has been working towards getting agreement among many administrations for a 5 MHz amateur allocation. And that list only covers a number of highlights.

The elephant in the room is always going to be the publication of *AR* magazine; costing about

$105,000 just to print and distribute it in 2013, it is the largest single WIA expense.

Faced with a similar financial situation, the NZART changed its monthly magazine *Break-In* to a bi-monthly publication. The ARRL and the RSGB, in considering their future operational strategies, have each embarked on providing digital versions of their magazines, *QST* and *RadCom,* respectively.

Possibilities for increasing income

Membership fees provide the majority of the WIA's income, with a much smaller income stream derived from specific service charges along with Bookshop and other merchandise sales.

There is no opportunity to increase income from the License Assessments and the Callsign Management functions that the WIA performs on behalf of the ACMA because they have to be performed on a cost-recovery basis. That is, the WIA cannot derive a profit from them. These services are provided to the amateur radio community under a Commonwealth of Australia Deed of Agreement. Under the terms of the Deed, the WIA is prevented from deriving any net financial benefit from that work. In addition, Australian law also prevents any services provided by the WIA on behalf of the Commonwealth to be linked to membership.

As the WIA cannot financially benefit from the work it does on behalf of the ACMA, we cannot use that income to cross-subsidise other WIA activities, and we cannot link the provision of Licence Assessments, Certificates of Proficiency and callsigns to WIA membership. The WIA is audited yearly to ensure that these services comply with the terms of the Deed.

The WIA views this work it does on behalf of the ACMA as a service to Australian amateur radio generally. There has been no move to increase charges for these services. As advised in the President's Comment in the January/February 2014 issue of *AR*, the Board and our Registered Training Organisation (RTO) are working on streamlining the processes and procedures to reduce costs and to accelerate providing exam candidates with their results, Certificate of Proficiency and callsign within a short timeframe. This is a high priority in the WIA's ACMA Liaison work.

Another avenue for increasing income is to expand the range of our publications. The Foundation Licence Manual has been a remarkable success and will be continued because of the role it plays in education and licence assessments. The Annual Callbook is pretty much an "institution", although on-line services and resources are eating into its market. Going beyond these, the Board and the Publications Committee are keen to develop plans for other publications suited to the Australian amateur radio market, particularly for Foundation and Standard licensees. However, while developing these products will in time become a useful and necessary addition to the WIA's commercial activities, they can only be an adjunct supporting the WIA's objectives, and not the main game.

The WIA Bookshop is a valued service, and a small number of WIA publications, like the Foundation Licence Manual, are significant sources of merchandise revenue for the service. However, taken overall, the Bookshop is a small contributor to WIA income and a marginal operation, especially given the amount of work and effort required from volunteers. The Board believes that, by rearranging how the bookshop works, there are opportunities to both lower the cost to members of some publications, and also to improve the service. Book sales will never be a major source of revenue that can supplement membership fees, as these operations do for the ARRL and the RSGB.

Newsagent sales of *AR* magazine are rightly considered a proper channel for public promotion of amateur radio and the WIA. However, with sales at around 400-500 copies per issue, it will never be a big earner. Although the Institute receives less than half the cover price for copies sold, the income is nevertheless welcome, all the same. The cover price has been $8 since the January/February issue of 2012. Last year, the Board raised it to $9.70 from the January/February 2014 issue, which puts it in the same price ballpark as other slim, hobby interest magazines on the newsagents' shelves.

Membership fees

So we come to membership fees. The Board is generally aware of the age profile of the membership and your diverse social and employment backgrounds. Hence, there was concern among – and considerable discussion between – Board members that a considerable increase in membership fees may discourage too many potential members from joining and existing members from renewing, and thus be counterproductive. To some extent, any fee increase is likely to have a level of discouragement for some people, anyway. A number of scenarios to increase fees were canvassed – such as increasing the membership fees annually in small increments over the next 4-5 years, or only increasing fees a modest amount and reviewing the situation later. But it was clear that such measure would not help the bottom line soon enough, nor necessarily provide a firm foundation for the future.

Considering all that, the Board has a fiduciary duty (i.e. financial duty) to ensure the continued viability and development of the organisation, which weighed-in to the decision to increase the fees.

The increase for full membership is $15, equal to 18.75%.

For concessional membership, the increase is just $10, equal to 14.3%. The other membership grades have been similarly adjusted and then set at sensible dollar amounts. There is no escaping that, in percentage terms, the change to the full membership fee is a substantial increase. However, in dollar terms – an increase of $15 for full membership – it's not great compared to the broader costs of living – three beers per year, a modest bottle of wine, less than a packet of cigarettes (for the remaining members that smoke, these days), and so on. The Student membership fee remains unchanged at $35, preserving the original purpose of setting this fee level as being an encouragement to students to join and a concession to their generally impecunious circumstances.

To ease the burden of paying membership fees all in one go, the Board has introduced quarterly membership payments by direct debit, for those who would find that system more convenient.

The WIA Board saw that this policy change meets the need to make it easier for people to renew their membership, which may contribute to reducing non-renewals, as well as encouraging more people to join the WIA in the first place.

The Board felt that, undoubtedly, a proportion of current members would balk at paying a full membership of $95 per year for a variety of reasons – affordability, perceived value for money, competing demands from other needs and wants, etc. Introducing a quarterly payment direct debit scheme should contribute toward mitigating that.

Other than restoring income levels to more than cover costs, there is another benefit to an increase in membership fees. The Board concluded that the increase of just $15 per year would enable the introduction of a digital edition of *AR* magazine in parallel with the existing paper edition for a period, giving sufficient time to test the acceptance of the transition to publishing only a digital edition.

The next most effective way to increase income from membership subscriptions is for the WIA to find a persuasive way to retain existing members, while recruiting new ones. The WIA has always had a small membership churn rate of a few per cent, which varies in a minor way from year to year. Fortunately, the level of non-renewals in 2013 was an improvement on previous years.

No doubt there is a variety of reasons for membership churn, including lifestyle changes, loss of interest in the hobby, loss of interest in the WIA and, naturally, a proportion becoming silent keys. And there are always some who just don't get around to renewing! The Board will implement a program in 2014 to address non-renewals, while recruiting efforts are continued.

The on-line future

From the introduction of the digital edition in July, members who have provided us with an up-to-date email address will receive an email each month when the digital edition is available for download via a secure log-on. Those of you who are ARRL members with a 'digital' subscription will already have experience of this sort of facility.

As *Amateur Radio* magazine is the most significant tangible benefit of membership, the WIA Board is concerned to see that, in the transition away from the exclusive printed edition, the opportunities for value-adding are maximised for the benefit of members. The digital edition of *AR* magazine affords opportunities for value-added services not available in the print edition, such as live hypertext links to websites and on-line videos, for example. In addition, supplementary content can be provided as an adjunct to the digital edition, such as larger-scale diagrams, software, printed circuit board patterns etc. – even (gasp!) digital format advertising. Authors, of course, will be able to take advantage of this, particularly.

While these new features and facilities are all 'on the table', it is anticipated that the digital edition of *AR* will develop over time. Don't expect it to be fully formed from the get-go.

It is possible that, sometime down the track, the WIA's member-exclusive publishing may morph from just a monthly magazine as at present to providing a wider range of information at more frequent intervals, which may also include updates to already-published material. On-line magazines are increasingly moving to a continuous publication model, with news updates and new articles being published almost as they arrive. Two examples that come to mind, in RF technology areas, are RF Globalnet at www.rfglobalnet.com, and Wireless Design Online at, www.wirelessdesignonline.com Both these publications are regularly updated, about once or twice a week, with email notifications sent to subscribers. They are both very rich in on-line content.

As digital production and distribution technology develops, the Institute will be in a position to evaluate and choose to exploit new developments as they become available.

Membership Survey 2014

At this juncture in the National WIA's history, to form a foundation for future planning for the Institute, the Board felt it essential that a snapshot of the membership's demographics, computer capabilities, interests and views on a range of relevant matters be canvassed.

The Membership Survey is provided in two forms: **an on-line survey – which we encourage as many members as possible to use,** and a paper form – published

in this issue as the centre four-page sheet. The latter provides for members without internet access.

The on-line application can be found here: *https://www.surveymonkey.com/s/WIAMemberSurvey*

The Survey closes on 14 April 2014

The Board looks forward to obtaining the results and sharing them in *AR* magazine and on the website and news broadcasts later in the year.

Thanks to Vice President Chris Platt VK5CP for assistance in compiling the questions and creating the on-line survey.

MEMBERSHIP FEES FROM 1 JULY 2014

Full member, 1-year	$95.00
Full member, 5-year	$451.00
Concessional member, 1-year	$80.00
Concessional member, 5-year	$380.00
Student member, 1-year	$35.00
Overseas member, 1-year	$105.00
Overseas member, 5-year	$500.00
Additional Family member (no *AR*), 1-year	$36.00
Additional Family member (no *AR*), 5-year	$170.00

Full and Concessional Members are now able to opt to pay their annual fees quarterly by direct debit, when joining or renewing.

Full member, 1-year, paid quarterly	$24.00 per quarter
Concessional member, 1-year, paid quarterly	$20.00 per quarter

If your renewal comes up in the meantime, take the opportunity to renew before the price rise! Quarterly payments at the current annual fee rate can now be arranged through the WIA Office for membership renewals that fall due before 1 July.

Amateur Radio Digital Edition

From 1 July 2014, *Amateur Radio* magazine will be available to members as a portable document format (pdf) file from the WIA website, accessible using your WIA member number and member password. PDF files can be read with the free Adobe Reader application. If you don't already have it, Adobe Reader can be downloaded from *www.adobe.com/au/*

A sample PDF version of *AR* magazine is available here: *http://www.wia.org.au/members/armag/pdf*

The digital edition will be available to members in addition to the print edition of *AR* magazine for at least two years, through to 30 June 2016, by which time it is expected that the WIA Board will make a decision about continuance of the print edition.

Likewise, the print edition of *AR* magazine will continue to be sold through newsagents until the WIA Board decides otherwise. From the January/February 2014 issue, the cover price increased to $9.70.

Press Release

Wireless Institute of Australia Merit Awards

The Board of the WIA at its discretion makes awards to members for their contribution to Amateur Radio. These awards are usually presented at the WIA's Annual Conference and AGM. The Board is now calling for nominations.

The nomination form is available for download on the WIA website. When completing the survey, you are not required to suggest which award should be made. The Board will assess each nomination, and decide which awards, if any, it will make.

Clearly it's best to include as much information as you can so as to inform the Board, and please do keep it in some sort of chronological order. Also include information about any other awards they may have received. It's important to recognise the work done within the hobby, so please do give some thought to nominating someone you know of.

Nominations close on 31st March, and awards will be announced and where possible presented at the WIA's 2014 AGM and Conference on the Sunshine Coast on May 16-18.

2014 WIA Membership Survey

If you are not able to complete the survey on-line, these four pages have been arranged for easy extraction from the magazine, or you can photocopy them.

Please answer all questions marked with # . Answers to the other questions are optional.

Post your completed survey to: WIA Member Survey, PO Box 2042, Bayswater VIC 3153.

It must reach us by Monday 14 April 2014.

 # 1. Please enter your 6-digit WIA Membership Number, which can be found on the address label that comes with your AR magazine, or can be obtained from the WIA Office.

☐

 # 2. Which category of WIA membership do you currently hold?

Full	Concessional	Student	Family	Overseas	Non-AR
☐	☐	☐	☐	☐	☐

 # 3. What is the total period you have been a member of the WIA, including membership of former divisions?

0-5 years	6-10 years	11-20 years	21-30 years	over 30 years
☐	☐	☐	☐	☐

 # 4. Which level of Amateur Radio Licence do you currently hold?

None	Foundation	Standard	Advanced
☐	☐	☐	☐

 # 5. What was the first level of licence that you held?

Old Full (AOCP)	Old Limited (AOLCP)	Old Novice (NAOCP)	Old Novice Limited	Old Intermediate	Foundation	Standard	Advanced
☐	☐	☐	☐	☐	☐	☐	☐

 # 6. How long did you hold your first amateur radio licence before upgrading (not counting the automatic 'upgrades' when grades changed in 2004)?

Less than 2 years	2-5 years	6-10 years	11-30 years	over 30 years
☐	☐	☐	☐	☐

 # 7. Which category below includes your age?

20 or younger	21-30	31-40	41-50	51-60	61-70	71-80	over 80	Prefer not to state
☐	☐	☐	☐	☐	☐	☐	☐	☐

 # 8. What are the postcodes of your primary residence and your primary radio station location?

Postcode of primary residence ☐

Postcode of primary radio station ☐

 # 9. Where is your primary radio station located?

Inner city area	Suburban area	Outer urban /fringe area	Semi-rural	Rural	Remote (>30 km from nearest town)
☐	☐	☐	☐	☐	☐

 # 10. Which type/s of computer/s do you own (select all that apply)?

None	Desktop PC	Laptop/Notebook	Tablet	iPad	Smartphone	Other
☐	☐	☐	☐	☐	☐	☐

 # 11. Which operating system/s do you run on your computer/s (select all that apply)?

Windows	Apple OS	Linux (or variant)	Android	iOS	Other
☐	☐	☐	☐	☐	☐

 # 12. Do you use the internet (select all that apply)?

No	At home	At library	At work	On the move	Elsewhere
☐	☐	☐	☐	☐	☐

 # 13. How often do you use the internet?

Never	<5 days per month	5-10 days per month	3-5 days per week	Daily
☐	☐	☐	☐	☐

 # 14. What is/are the speed/s of your internet service/s (select all that apply)?

Dial-up	Medium speed (GSM/3G/ ADSL1)	High speed (4G/ADSL2/Cable/NBN)	I don't have internet access
☐	☐	☐	☐

 # 15. Do you use any of these on-line social media services, and how often?

	Daily	3-5 days per week	5-10 days per month	<5 days per month	Never
Facebook	☐	☐	☐	☐	☐
Twitter	☐	☐	☐	☐	☐
Flickr	☐	☐	☐	☐	☐
Linked-In	☐	☐	☐	☐	☐
Instagram	☐	☐	☐	☐	☐
Pinterest	☐	☐	☐	☐	☐
Tumblr	☐	☐	☐	☐	☐
WordPress	☐	☐	☐	☐	☐

 # 16. Do you use any of these Australian on-line amateur radio services, and how often (select all that apply)?

	Daily	3-5 days per week	5-10 days per month	<5 days per month	Never
VK Logger	☐	☐	☐	☐	☐
VK Logger Forums	☐	☐	☐	☐	☐
VK Classifieds	☐	☐	☐	☐	☐
VK Ham	☐	☐	☐	☐	☐
WIA website	☐	☐	☐	☐	☐
AR NSW website	☐	☐	☐	☐	☐
AR VIC website	☐	☐	☐	☐	☐
Other AR club websites	☐	☐	☐	☐	☐

 # 17. How often do you read AR magazine?

I don't receive it	<3 issues per year	4-5 issues per year	Most issues	Every issue
☐	☐	☐	☐	☐

18. Where do you mostly read AR magazine?

At home	At work	In the shack	On the move (car, public transport etc)
☐	☐	☐	☐

 # 19. In 2013, about how much money did you spend on amateur radio (books, magazines, parts, equipment, subscriptions, attending events)?

Under $100	$101-$499	$500-$999	$1000-$4999	>$5000	Prefer not to say
☐	☐	☐	☐	☐	☐

 # 20. Would you please rate the importance to you of the following activities, functions and services provided by the WIA?

	Not important	Least important	Important	Very important	Most important
ACMA Liaison / Lobbying	☐	☐	☐	☐	☐
AR magazine	☐	☐	☐	☐	☐
Annual Callbook	☐	☐	☐	☐	☐
AGM & Conference weekend	☐	☐	☐	☐	☐
Awards Management	☐	☐	☐	☐	☐
Beacon & Repeater Licence Coordination	☐	☐	☐	☐	☐
Callsign Recommendations	☐	☐	☐	☐	☐
Contests Management	☐	☐	☐	☐	☐
Licence Education & Syllabus Development	☐	☐	☐	☐	☐
Examination Service	☐	☐	☐	☐	☐
International Representation (IARU, ITU, WRCs)	☐	☐	☐	☐	☐
MEMNET Membership Management	☐	☐	☐	☐	☐
National News Broadcasts	☐	☐	☐	☐	☐
News Service web bulletins	☐	☐	☐	☐	☐
Online Membership Renewal	☐	☐	☐	☐	☐
Promoting the WIA	☐	☐	☐	☐	☐
Protecting our Spectrum (EMI, RFI, Standards Australia etc)	☐	☐	☐	☐	☐
Publicising the Hobby	☐	☐	☐	☐	☐
QSL Service	☐	☐	☐	☐	☐
Technical Advisory Committee services	☐	☐	☐	☐	☐
WIA Affiliated Clubs support & insurance	☐	☐	☐	☐	☐
WIA Bookshop	☐	☐	☐	☐	☐
WIA Email Address Service	☐	☐	☐	☐	☐
WIA IARU Monitoring System (intruder watch)	☐	☐	☐	☐	☐
WIA Website	☐	☐	☐	☐	☐

 # 21. Considering the range of activities, functions and services offered by the WIA, how do you rate the cost of your annual WIA membership?

Poor value	Reasonable value	Good value	Excellent value	I believe I should be a member regardless
☐	☐	☐	☐	☐

 # 22. How often would you prefer to pay your membership fees?

Quarterly (automatic direct debit)	Annually	Five-yearly
☐	☐	☐

 # 23. Are you a member of an Australian amateur radio club or society?

Yes	No
☐	☐

 # 24. If so, is the club or society affiliated with the WIA?

Yes	No	Don't know
☐	☐	☐

25. If you have had occasion to contact the WIA National Office in the last 12 months, how would you rate the level of service received?

Very Good	Good	Satisfactory	Less than satisfactory	Poor
☐	☐	☐	☐	☐

26. If you have had reason to communicate with a WIA Official or Committee Member in the last 12 months, how would you rate the level of service received?

Very Good	Good	Satisfactory	Less than satisfactory	Poor
☐	☐	☐	☐	☐

 # 27. Have you attended a WIA AGM and Conference Weekend in the last three years?

Yes	No
☐	☐

28. If you have not attended a WIA AGM and Conference Weekend in the last three years, which of the following would encourage you to attend in the future (select all that apply)?

A location nearer to me	Lower cost of participation	Cheaper accommodation options	Visit to a place or facility of technical interest	Presentation from a public figure	Presentation from an ACMA representative
☐	☐	☐	☐	☐	☐

29. If you were WIA President - what changes to the WIA activities, functions and member services would you advocate (please be brief)?

ALARA

Margaret Blight VK3FMAB – Publicity Officer

We are all looking forward to the celebration of ALARA's 40th birthday in 2015. This organisation has developed and grown over the years due mainly to the active participation of interested women who have given support and encouragement to other female amateur radio operators. Many individuals were involved in contributing their time and energy to initiating and eventually establishing a solid groundwork for the organisation now known as ALARA and we acknowledge the valuable contribution they have made to amateur radio. At this time we also acknowledge the work done by one of those women who is now a Silent Key.

Bron Brown VK3DYF – SK

Thelma May Brown, known as 'Bron' to her many radio friends, passed away on January 17th 2014. A memorial service attended by family and many friends was held in Rosebud on 28th January following a private cremation.

Bron obtained her radio licence in 1982. She had a long and active history with ALARA as the following will show. Bron was VK3 state representative from 1984 - 2000, and was the ALARA Newsletter Editor from 1986 - 1992. She struggled with an old Gestetner machine until Dot VK2DB eventually took over in 1992 and, as technology had progressed somewhat, was able to change to a computer for the newsletter. Bron served on the ALARA committee for a number of years and held the position of secretary from 1992 - 1996. She also undertook the task of minute secretary from 1995 - 2007.

From August 1988 onwards, Bron contributed considerable publicity to our radio hobby by

Photo 1: Bron Brown circa 1989.

regularly contacting the SPARC station VK3BSP which was demonstrating amateur radio to 12 year old primary pupils who came in groups from schools around the area. Bron also worked with Gwen VK3DYL (SK) and Christine VK5CTY on developing the constitution when ALARA became an incorporated body in 1995. She was presented with an award for her many services to ALARA.

During the Bicentennial year (1988) she operated the VI88WIA call sign, with others, from 4th July to the 1st August and the VI88VIC call sign from the 22nd to the 28th September. Early in 1989 Bron, Gwen VK3DYL and Raedi Fowler, a former president, commenced planning a surprise party for Mavis VK3KS on the occasion of the 50th anniversary of Mavis gaining her licence, and 20 years later, when Mavis celebrated 70 years as a radio licence holder, Bron was in the audience to lend her support to this auspicious occasion.

She will be well remembered and sadly missed by the many operators who knew her.

VK3 news

Due to unforeseen circumstances it was necessary to delay the commencement of the next Ladies Foundation Course which was intended to be held earlier this year. It is now likely to be held shortly after Easter. Further details when they become available.

The next VK3 ALARA lunch will be hosted by Pamela VK3NK. Members can be assured of another pleasant trip out of town for this occasion. Something to look forward to as we have always found there is often a special ingredient provided by our hostess to add to the enjoyment.

It was good to hear that President Jean VK3VIP has been able to extend her DX contacts owing to the installation of a new tri-band Yagi antenna at her and OM John VK3DQ's home by Tony VK3TZ who runs a small electronics business. They purchased a heavy duty television rotator after searching on line and the antenna has been successfully mounted and installed on the roof of their house. Prior to this installation a vertical antenna was used on 10/15/20 metres but local noise was always a problem. However, there has been a very satisfactory result since using the new antenna.

VK5 news from ALARA – courtesy of Christine VK5CTY.

The VK5 girls have had a couple of most interesting meetings. The December luncheon was well attended. Everyone brought one gift and took home one gift – worth no more than $10, Kris Kringle style, so there was fun unwrapping parcels of all sizes. Because that luncheon happened to fall on Friday 13th we also had black cats with Father Christmas hats on to ward off any triskaidekaphobia problems.

In January we usually try to do something different. This year was a great success. We all went up to Mount Barker, a drive of about 30 or 40 minutes up the freeway, where we chose one of five different films showing at the cinema complex there. All the films started and finished at about the same time so we could meet afterwards for a meal together. It was a lovely day out in good company, which included OMs this time.

We are pleased to have Marilyn, formally VK3DMS, now living in VK5-land. She was delighted to be able to simply change the number in her callsign and is now VK5DMS.

News from VK2 – contributed by Dot VK2DB

In 2013 OM John VK2ZOI and I travelled overseas for a ladies' radio meeting again, just a weekend meeting. This time we filled it out with a bus trip through Scandinavia and a river cruise in Russia. We were expecting to carry our two metre/70 cm hand held radios as we were allowed to take them into Russia. But after reading all the rules and regulations about carrying them in and out, we decided it wasn't worth the hassle. Actually, in hindsight and thinking of the experience we had of entering and leaving, we would have had no problem. Everywhere we went, we wore our callsigns and looked for evidence of amateur radio activity but only a few were obviously amateur and we never had our cameras ready at the right time.

We left home on 4th August 2013 and flew to Copenhagen where, thankfully, most people could speak English. Even though things were very expensive, we loved Denmark. Denmark was easy walking with rather flat land. The main attractions to me in Sweden, well, in Stockholm, were the majestic City Hall where the Nobel Prize banquet and some of the awards are given, and the Wasa, which is a warship that was built in the early 1600s. Sweden had some nice hills with lovely farming country and beautiful lake views.

Photo 2: The VK5 ALARA girls at their Christmas luncheon.

Then it was across country to Morokulien, a six hectare area with a peace monument and amateur radio station, on the border between Sweden and Norway. Tourists are allowed to book the station and use it but as we were there less than an hour, in which time we had to queue to change currency, eat, walk and take photos, we didn't have time.

Norway had breath-taking views of mountains every time you turned your head.

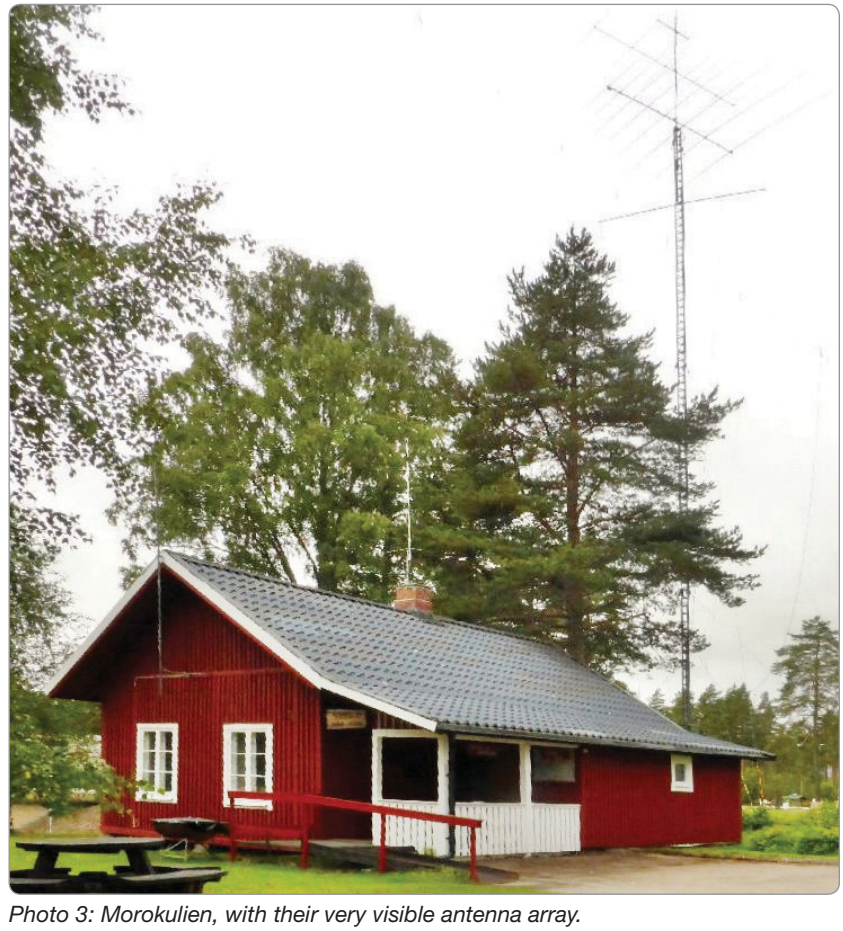


Photo 3: Morokulien, with their very visible antenna array.

VK3 news Amateur Radio Victoria

Jim Linton VK3PC
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w *www.amateurradio.com.au*

Several long haul jobs completed

The good news about the Ballarat repeater VK3RBA on Mt Buninyong is that it's now back in service after more than two years of negotiations and about $8000 of site work to bring it up to full commercial standard. The repeater was removed originally as a result of a reshuffle by the site management which posed a doubt over whether VK3RBA should in fact continue to be an occupant. A lot of work by a few, and diplomacy, eventually won the day.

It was not a matter that could be fixed overnight yet the VK3RBA site played an important role being strategically located and serving Ballarat in western Victoria. With the manpower of a few local radio amateurs, WICEN (Victoria) and Amateur Radio Victoria, the repeater has been restored. The next step is to link VK3RBA with VK3RWZ Mt William giving it a wide coverage area.

In another development the HF outlets on 80 m, 40 m and 10 m have a new home and are part of the VK3BWI broadcast network that runs VK1WIA at 1030 am each Sunday. That has taken a while because land in the northwest previously used for the HF transmissions was lost after being converted to another important use by the owner, while at about the same time the location of a former VK3BWI hut in Waverley became a new educational facility.

However the VK3BWI site owner at Waverley was very keen on keeping the good long-standing relationship. A new area was found on site, and with government funding of around $100,000 it was able to be re-established. The work was done with the help of St John Ambulance and WICEN (Victoria). Initially a new expanded building and tower enables it to house the HF facility, and hopefully all of the VK3BWI facility on VHF-UHF when member-funds are found.

Restoration of Mt Stanley VK3RNU, some 16 km from Beechworth in northeast Victoria, lost in the Black Saturday bushfires in 2009, is nearly 80% complete, in a project backed with a $120,000 government grant. The project, with support of St John Ambulance, had a few unforseen site issues and suffered delays due to a major change in the required specifications in the building code, as a response to disaster preparedness.

These major projects come after a lot of work by Amateur Radio Victoria and its partners over the long haul. The membership is able to take pride in the three achievements that are only possible through having a state-wide organisation.

Interference to repeaters

Many find the use of the repeater network throughout Victoria to be very useful. Their licences and maintenance are paid for by member-funds, but efficient operation of some two metre band repeaters in the short-term is problematic due to interference. The trouble caused by co-sited powerful paging systems on 148 MHz that falsely trigger our repeaters has been often overcome until now by the use of a 91.5Hz CTCSS tone. The use of pagers also went into decline to be overtaken by mobile phone text messaging. Pagers are very useful and are used by emergency services and others. However the Australian Communications and Media Authority (ACMA) released a document called LM8 which was designed to reduce interference when installing Trunked Radio Systems.

The table used in the high end of the VHF mobile allocation has a number of channels 600 kHz apart. The ACMA document inadvertently did not include a reference to avoid our repeaters. The 600 kHz split (between input and output) is traditionally used worldwide by those repeaters, enabling them to transmit and receive at the same time. Most repeaters were in place on mountain tops in the 1970s, but a new emergency service radio system is just now being installed under ACMA guidelines which issues licence pairs with a 600 kHz split, just above the exclusive two metre band. This can result in severe inter-modulation with the input frequency of amateur service repeaters and can cause harmful interference. Representations to the ACMA have been received very well and a technical solution to this mishap is being considered.

Better signals from VK3RTV

New antennas have been built and fitted to the digital television repeater VK3RTV giving it better coverage in the Melbourne and Geelong area. Its history on Mt Dandenong, east of Melbourne, began in 1977 with black and white transmission, then conversion to full colour television. After 30+ years VK3RTV adopted the DVB-T digital standard following substantial funding by Amateur Radio Victoria and a grant from the WIA club scheme, plus other equipment and lot of voluntary time.

Next due in the ongoing project was the antennas, with Peter Cossins VK3BFG, the custodian of the repeater, building a new transmit

antenna with the assistance of the machine shop at the Eastern and Mountain District Radio Club and donations from repeater users.

The array consists of four four-element Yagis orientated to cover Melbourne and Geelong. The driven elements are folded dipoles made from flat aluminium strip. The folded dipoles have a small plastic box surrounding the cable feed and balun for weather protection. At the suggestion of Drew Diamond VK3XU, the plastic box has three coats of Wattyl Solagard ® for ultraviolet ray protection. Peter VK3BFG says that given that the old arrays were up for about 20 years in a very hostile environment, they lasted fairly well. The plastic boxes protecting the feed were intact, but were infested by small spiders.

The new arrays are stronger mechanically and connected to the matching system by equal lengths of coaxial cable. Two antennas in parallel are nominally 25 Ω. A quarter wave 50 Ω line then converts this impedance to 100 Ω. The second two antennas connected similarly gives 100 Ω ohms. Parallel the two sections and you have 50 Ω.

The theory was re-enforced in practice, the array has a very low VSWR. Before installation the antenna array was field tested at a footy oval with the assistance of Ralph Parkhurst VK3LL, Damian Ayers VK3KQ and Jack Bramham VK3WWW. Prior to that, the individual antenna design was verified at a Field Day for students at Chisholm Institute of TAFE with the assistance of Bob Duckworth VK3AIC.

The aim of the project was to design antennas that were broadband for DVB-T transmission, provide modest gain over dipoles and have the required coverage. It is early days, but initial signal reports are very encouraging.

After benchmarking signals first at about eight watts, a new FET power amplifier was installed to increase the power to 60 plus watts. This PA has homebrew from a W6PQL basic kit designed with VSWR, over voltage and over temperature protection.

Signal reports can be given on 147.400 MHz, the ATV liaison frequency. New 23 cm co-linear dipole antennas are now waiting for a band pass filter. A 23 cm spot beam for south-east of Mt Dandenong is still work in progress.

Next class session

Enrolments are open for the Foundation licence session to be held on April 26 and 27, at the Amateur Radio Victoria office. Orders of the study and operational practice guide book are available at $26 delivered Australia wide through the secure online bookshop at *shop.amateurradio.com.au*

To enrol in the quality classes contact Barry Robinson VK3PV 0428 516 001 or *foundation@amateurradio.com.au*

AMSAT-VK

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Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial amateur radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net
Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. Check-in starts 10 minutes prior to the start time. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RBM Blue Mountains repeater on 147.050 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia
VK5TRM, Loxton on 147.175 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, EchoLink node 399996

In Tasmania
VK7RTV Gawler 6 metre repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 metre repeater 146.775 MHz IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT or VK3JED conferences. Past experience has shown that the VK3JED server offers clearer audio. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Currently only SO-50 is available.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

VK2 news

Tim Mills VK2ZTM
e *vk2ztm@wia.org.au*

ARNSW will be holding their AGM at 10 am on Saturday 3rd May 2014 at the VK2WI Dural site. At each AGM an election for committee positions is conducted. Nominations are now being called, in writing, on a form available from the ARNSW web site *www.arnsw.org.au* or at the office. The proposer and seconder need to be personally known to the candidate. Nominations are to be mailed to or delivered to the VK2WI Dural office, 63 Quarry Road, Dural by 12 noon on 22nd March 2014. Advised by Tim Mills VK2ZTM, Secretary ARNSW.

In this month of March the upgrade course is being conducted by ARNSW at the VK2WI Dural site, commencing on Monday 3rd March and will run until November each Monday evening, except public holidays. Times 7 to 9 pm. On the weekend of 22nd and 23rd there will be a Foundation course with assessments for all licence grades on Sunday the 23rd. All candidates need to book by an email to *education@arnsw.org.au* At the end of the month, on Sunday 30th there will be the bi-monthly Trash and Treasure event followed by the Experimenters and Home Brew Group. Also this month there will be a field day at VK2WI on Sunday 9th as an antenna construction day for Foundation holders; details are being given via the VK2WI Sunday broadcasts. ARNSW has a presence on Twitter: *twitter.com/arnsw* The ARNSW library will be open during the Monday evening upgrade class and details are given on the weekly Sunday VK2WI broadcasts.

ARNSW recently announced the introduction of a Development Fund to provide assistance to radio clubs currently established within the VK2 region. The scheme commenced last month (February 2014) and submissions close on Friday 11th April 2014. To apply for information, guidelines and application form either write to ARNSW, PO Box 6044, Dural Delivery Centre. NSW. 2158 or email *office@arnsw.org.au*

The balloon launched by the Tamworth Radio Club in late December, which lost contact with control during its ascent, was found and returned to the group. John VK2YGV said it had a rough ride as the camera pictures showed that the payload was above the balloon at times.

Next month, over Easter, will be the annual Urunga Convention held in the Seniors Citizens hall in Bowra St, Urunga over the Saturday and Sunday. Ken VK2DGT is the usual contact point.

The Illawarra ARS is cutting back on some of their south coast repeater sites and making improvements at the remaining ones advised Rob VK2MT during a recent visit to the VK2WI site. Rob said the high charges for crown land site access forced some of the decisions the club had to make in the changes.

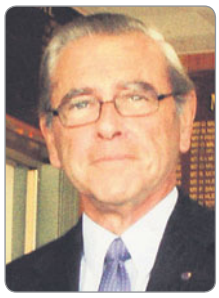
Next month (April) Westlakes ARC will celebrate their 50th birthday and will operate the special callsign VI2ATZ50 during April. Westlakes has introduced a 40 metre net on Monday, Wednesday and Friday on 7.150 MHz at 0930. They will be displaying at the Newcastle Show on Feb28 and March 1 and 2, at stand 41; On Sunday 6th April a lunch at the Cardiff RSL Club, Macquarie Rd, Cardiff with a 12 noon start. Bookings to Greg VK2CW at *vk2cw@bigpond.com*

With old newspapers available on line, seeking history is much easier these days. Richard VK2SKY keeps looking for a starting date of the Manly Warringah RS and he found a reference to the Manly Radio Club in early May 1923. From the paper of the 12th May 1923 there was a column about other Sydney based radio clubs which included the Metropolitan who met at the Laurel Cafe in the Royal Arcade in the city; Wentworth, Drummoyne and Manly, no other details; Leichhardt and District RS who met in Johnston St, Annadale. Bondi RC who had been in Birrell St, Bondi, were looking for a more convenient location. Western Suburbs met on Wednesdays in Auburn. Just to confuse the issue there was an Australian group, Australian Radio Relay League, with the initials ARRL. May 1923 was also when the first amateur contacts were made across the Pacific with America.

73 – Tim VK2ZTM.

Participate

John Moyle Field Day	15 & 16 March
PR 4 Amateur Radio EXPO	11-13 April
AM and CW for ANZAC Day Tableland Radio Group	25 April



VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

VK2ZOI 'Flower pot antenna' building day

The start of the New Year went off well with a group exercise involving 18 members, on a Sunday afternoon at the club house. They were building a two metre/70 cm portable antenna from a design by VK2ZOI, which was promoted by Lou VK3ALB, who provided construction information derived from the VK2ZOI website at *http://vk2zoi.com/flower-pots* as well as the base materials along with templates for the construction. All the necessary tools and equipment were also provided and several radios and SWR meters were available for testing the end products.

January 2014 – Summer VHF/UHF weekend

Once again the GARC fielded a number of teams for the event, in which it has had an unrivalled success over several decades.

VK3UHF

As always, the VK3UHF crew operated in this year's Summer VHF/UHF Field Day contest. This year the team comprised the two regulars David VK3QM and Chas VK3PY along with more recent recruits Arie VK3AMZ, Carlo VK3BCL and Lee VK3PK. Charlie VK3NX who is usually a regular operator was only available for Saturday due to impending work commitments, though they made good use of his microwave gear on 3.4, 24 and 47 GHz. Ken VK3NW was unfortunately unable to make it to the hill this time, but they look forward to his return in future events.

Photo 1: Club members in the construction process of the portable dual-bander.

Contacts were made on all bands from 50 MHz to 47 GHz, enjoying frequent contacts with GARC 'sister stations' VK3ALB and VK3DJ as well as the many stations that popped up to participate in the event. VK3ER was also operational, helping to keep up the pressure and contributing to the enjoyment on all bands, particularly on microwaves. Some noteworthy contacts were VK7MO (QE49) on 10 GHz, VK3BQJ (QF32) on 2.4, 3.4 and 10 GHz and VK3KH on 5.7 GHz, the latter being some 80 km across Port Phillip Bay, running just 10 mW to a panel array! It was a struggle, but they made it, largely down to Michael's (VK3KH) tenacity. Subject to confirmation, VK3UHF achieved its second highest score to date.

VK3DJ

In previous years Dallas VK3DJ had gone away with company on Summer Field Days , but in 2012 one of the GARC club members suggested he should find a couple of hilltops and focus on contacts instead of 'socialising'. So he did and to his surprise, ended up getting a score good enough to take out the single operator eight hour section.

This year he set up just prior to midday in QF11xy on a hilltop in a farmer's paddock near Inverleigh. Hot and dusty with no shelter other than what he had on his head he operated at this location until about 0430 UTC, making 72 contacts in five grid squares. He then packed

Photo 2: VK3UHF field day installation.

Photo 3: The VK3DJ antenna field day set up.

up and drove about 30 minutes north to his second location, just outside Shelford, to QF12xa. It took a little while to set up again but it was worth it as he made another 40 contacts and activated a further three grid squares.

Although not clearly discernible from the photograph the VK3DJ set up was as follows:

The 60 cm dish used a WA3RMX triband feed for the three lower bands 13 cm, 9 cm and 6 cm and a Chaparral feed for 10 GHz; the mast was a self-supporting five metre tilt over, with Yagis for 144 MHz, 70 cm and 23 cm. The base was secured under the car tyre.

VK3ALB

Team VK3ALB comprising Lou VK3ALB, Jenni VK3FJEN, Nik VK3BA and Michael VK3FMIC set up their 2014 Summer Field Day camp on Mount Gellibrand, QF11vs. The bands they operated on were 6 m, 2 m, 70 cm, 23 cm, 13 cm, 9 cm, 6 cm, 3 cm, 1.25 cm and 6.25 mm. Highlights of the weekend included excellent weather and reasonably good band conditions including a brief six metre opening into VK4.

A number of excellent contacts were recorded:

2 m - VK5PJ at 588 km, VK1DA at 537 km and VK5ACY at 527 km.
70 cm - VK5PJ at 588 km and VK5AKK at 577 km.
23 cm - VK5PJ at 588 km, VK2KRR at 438 km and for the first time VK3EJ at 302 km.

Conditions toward the east were very good with a number of 200 km plus contacts into Gippsland on most bands except 5.7 GHz. The stand out contact was Rhett VK3GHZ on 10 GHz at 331 km.

Photo 4: The antenna setup at VK3ALB.

Silent Key

Keith Manning ex VK2NZM

We regret to advise the passing of Keith Manning ex VK2NZM, on 31 August, 2013, aged 82 years.

Keith was for over 30 years a member of the VK2BWI slow Morse practice panel of operators, who until the year 2000 broadcast on a nightly basis. VK2BWI operators sent to air a graded session of slow Morse practice, to enable listeners, most of whom became licensed amateurs, to learn Morse code for their five and 10 wpm examinations. Proficiency in Morse code sending and receiving was then mandatory for the Novice and Full Call licences.

Keith was born in Levin NZ, in August, 1931, moving to Australia in the 1960s. Keith sent a weekly Morse practice session until 2006, when he had a stroke at his QTH in Adamstown, NSW. At that time, his brothers in NZ deemed it better to repatriate Keith, who was unmarried, to his country of birth, to be closer to his family. He lived in retirement at Hastings, NZ until his death, taking the callsign ZL2MNZ, and was active on VHF and HF. Keith's elder brother Ted ZL2VI, who lived in New Plymouth, was also a very active and well known amateur operator, until his recent death.

I was able to keep in regular contact with Keith in NZ on 80 and 40 metres, and visited him in Hastings a year or so before his final illness. Many thanks go to his brother, Ron Manning, from Palmerston North, who advised of Keith's passing, and provided details of his life. We miss your cheery voice on air, Keith. I extend heartfelt gratitude from all your friends for your extended and selfless service in the best interests of amateur radio.

Mention should be made in passing of the VK2BWI panel now long disbanded. For many years, the VK2BWI station operated nightly, with a different operator, on a frequency of 3.550 kHz, followed by a similar hour's Morse practice, sent by VK5WI. Those stations served today's amateur fraternity well, providing excellent and sustained Morse practice, each night of the week, over a long period of time. It was usual for operators to serve for 20 years and more, and over the years literally thousands of amateurs benefited by being able to listen to the service. VK2BWI is still heard weekly, on Thursday evenings only, at 2000 hours local east coast time, on that same frequency, 3.550 MHz.

Submitted by Ross Wilson VK2ER.

VK4news QTC

Mike Charteris VK4QS
e *mikevk4qs@gmail.com*

Greetings, fellow amateurs, and welcome to the March edition of *QTC*.

I would like to start by sincerely thanking those clubs who were kind enough to reply to my email requesting news for March at very short notice. Some sent more than could be printed while others remain a mystery. I know how hard it is to drum up some club news let alone chase it up to be printed. I, too, was a club member, President, and held other positions including public relations and promotions. Perhaps at your next club meeting it could be put to members if anyone wishes to volunteer to make some news jottings that in turn could be emailed to me once a month. Conversely, I am happy to email your Club each month to see what news you have.

I would like to start off this March edition with a request to all clubs to send me an email with an annotated group photo of your club and its members. Then in the coming months I will endeavour to see your photos published under the heading 'Meet the clubs' in the pages of our VK4news *QTC* segment. If you would be kind enough to make it a high resolution photo, say one MB or so, and have attached some annotation as to who is in the photo please. Let's meet each other in these pages and see the faces behind the names and call signs. Also as requested last month, please raise at your next meeting the possibility of a 'Donation Tin' at the club for the Royal Flying Doctor service here in Queensland. I would also be happy to receive any feedback you might have about VK4News *QTC*. Are you happy with it, are there things you are not happy with, what things would you like to see more of, or perhaps suggestions as to how it can improve to represent you better. In the end these pages are 'Yours', and for your clubs, so drop me an email as I look forward to hearing from you. This month we have some interesting news from the clubs of our great state, and first off a story that is taking one amateur in particular to Outer Space history.

Messages to Bennu!
Certificate of Participation
Amateur Radio Station VK4FNQA
Certificate #00038591
Thank you for joining us on the OSIRIS-REx asteroid sample return mission to Bennu. Your name will reside on one device placed in the Sample Return Capsule for a round-trip journey from Earth, to Bennu, and back; and on a second device affixed to the spacecraft instrument deck for continued travels in space.
OSIRIS-REx is a NASA mission. The Messages to Bennu! program is part of The Planetary Society's Messages from Earth program.
Bill Nye
Chief Executive Officer
The Planetary Society
Dante Lauretta
Principal Investigator
OSIRIS-REx
Messages to Bennu! is a partnership of the Planetary Society and the University of Arizona. NASA chose the University of Arizona to lead its third New Frontiers Mission. OSIRIS-REx stands for Origins Spectral Interpretations Resource Identification Security Regolith Explorer. Principal Investigator Dante Lauretta leads the mission.

Photo 1: The VK4FNQA 'Certificate of Participation' #00038591.

Townsville Amateur Radio Club

From far North Queensland comes some very interesting inter-stellar news. Eldon Bryant VK4FNQA reports that his call sign will be etched onto a microchip that will in turn be placed aboard a spacecraft headed towards the asteroid *Bennu* in the year 2016. As it turns out, this will coincide with the year of Eldon's 80th birthday. Eldon has also been sent a 'Certificate of Participation', and to quote just some of the write up.

Thank you for joining us on the OSIRUS-REX Asteroid sample return mission to Bannu. Your name will reside on one device placed in the Sample Return Capsule for a round trip from Earth, to Bennu, and back, and on a second device affixed to the spacecraft instrument deck for continued travels in space.

So congratulations Eldon VK4FNQA. Well done in your efforts in promoting amateur radio on an interstellar stage that has seen your name lit up in space.

Brisbane Amateur Radio Club

In news from the President of BARC, Kevin tells us that this year's BARC Fest will *not* be held at the Mt Gravatt Showgrounds. Instead, visitors will be directed to the Salvation Army Church hall, located on the corner of Beaudesert Road and Kameruker

Street, in Calamvale. This building is approximately 300 square metres and fully carpeted. Once again the women of the Corps will be undertaking the catering arrangements for the food and refreshments, which will be of the high standard in previous years.

Kevin tells us that the club's expansion by number has seen some 17 new members over the past twelve months. Prospective 'F' calls are included in that number, along with a good few who are seriously studying to upgrade. The club has changed its meeting dynamic which is seeing members gather on a Saturday afternoon for a focus on 'Practical Activities'. This is proving popular with members, so if you would like to join in the fun, as a prospective amateur or to just renew your membership, then contact the Kevin via the BARC website and get onboard.

Maryborough Electronics and Radio Group

This month we hear from Geoff VK4ZPP who tells us that the Maryborough club has in operation an EchoLink/IRLP node running on two metres using the club call sign VK4MB-L. Part of the project is to check the coverage, particularly dead spots towards Hervey Bay and along the Bruce Highway. Geoff says MERG is hopeful that the results will support the commissioning of a repeater service for Maryborough. It is also hoped that the repeater will light up the areas that their repeaters don't quite cover around Gympie, Hervey Bay and Bundaberg. MERG have advised QTAC of their proposal and await their advice as to meeting LCD conditions and the availability of a frequency pair for the task.

Central Queensland Amateur Radio Club - A day on the bands at Weasel Park

Recently, Jack VK4JRC and Ray VK4HOT decided to have a day on the airwaves; work was temporarily banned for the day! Accompanied by the trusty IC-718 and KX3 they headed out to the club's area at Weasel Park to hook up to the

Photo 2: Ray VK4HOT operating the IC-718 at Weasel Park.

one km long wire loop antenna. Time of day often decides the band of operation and they found themselves on 20 metres calling CQ. Ray was rewarded with a reply from Tom VK3EO in Swan Hill, Victoria, a good start. Next, Jack fired up his KX3 with just three watts and internal batteries into a Moonraker telescopic chrome whip to receive a reasonable report of signal strength 4, readability 2. The next contact was more substantial, being Gerry AE7KI outside of Spokane, Washington state on 21.265 MHz. Amazingly, Jack fired up with the KX3 to achieve another 4x1 report to the states. After that the contacts continued for a thoroughly enjoyable day. The club's facilities at Weasel Park are considerable, with power, sleeping accommodation and cooking facilities. This is without even mentioning the huge area available for the likes of a one km loop. Work on the facility is on-going with lots of good endeavours being carried out by a dedicated team within the CQARA Club.

Mackay Amateur Radio Club

It looks like the Mackay club is going to have a pretty busy month, kicking off on the weekend of March 1-2 with the Breakaway-Koumala Horse Endurance Ride 40/80. A couple of weeks later on the weekend of March 22-23 the club is off to do the Denison Creek Horse Endurance Ride, 20/60E/80. The co-ordinator for this event is George Adams VK4HAN. If you would like to volunteer to assist with either of these events, then contact George. It goes without saying that such events are almost financially impossible without the assistance of local radio clubs who donate their time for the community. To pay for commercial communications as a necessity would really see such events cancelled due to the excessive financial outlay. So once again we see how the local amateur radio club is an integral part of the community for everyone's benefit by way of its skilled operators.

City of Brisbane Radio Club - Summer Field Day operations from Mt. Gravatt

In news from the City of Brisbane, Ron VK4CRO tells us that he, along with fellow club members John VK4MFJ and Eric VK4NEF, ventured up to Mount Gravatt Lookout to participate in the 8 hour Multi-Operator section of the Summer Field Day. The equipment

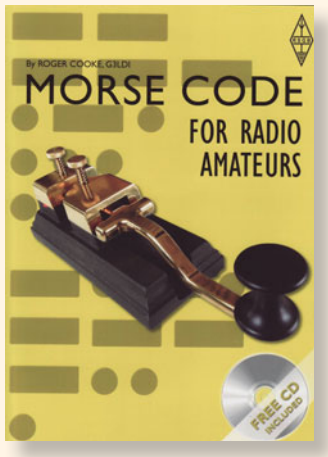
Photo 3: A panorama of the Summer FD station set-up on Mt Gravatt.

for the day was an FT-817 running a transverter for 10 GHz and 2.4 GHz, and 1296 MHz from another FT-817, with a TR-9500 on 70 cm, an IC-910 on two metres and an Elecraft K3 to a vertical. Operations went well with contacts on both two and six metres which saw VK3 and VK5 picked up on the vertical before the beam, which was a bit of a surprise. Murphy turned up as usual to oversee the casualties on the day which consisted of the 1296 gear while 70 cm went QRT as well. Ron reckons a good day was had by all, with a few contacts on 10 GHz and 2.4 GHZ. The boys managed to create a lot of interest with the visiting public with more than 50 inquiries as to what the hell they were up to. The fact that John VK4MFJ had 'Stormchasers' emblazoned across the front of his van probably drew out the more inquisitive to request information while others stood back in awe.

Well my friends that's all for March, so stay safe, check twice and cut once. If you would like to see your club in the pages of VK4news *QTC* then just drop me an email.

I look forward to your feedback.

Cheers Mike VK4QS.



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Morse Code for Radio Amateurs

By Roger Cooke G3LDI

50% larger than its predecessor, the 11th edition of RSGB's Morse Code for Radio Amateurs is essential for anyone looking to expand their horizons by adding Morse code to their skills. It has everything you need to get started in the fascinating hobby, to using computers and increasing your speed.

CD included!: A free dual purpose computer/audio CD is included. The CD contains nearly an hour of audio recordings of Morse code at 5, 10 and 15 words per minute. This provides the opportunity to learn Morse code in the car or at leisure by playing the disk in a CD player.

The computer section contains audio files which can be run on a PC soundcard or downloaded to a personal MP3 player. The CD also contains Morse Software for learning Morse code and Morse contesting. In addition there is bonus material such as additional articles, pictures, and an array of web links.

Morse Code for Radio Amateurs is essential for anyone wanting to widen their horizons by adding Morse code to their skills.

48 pages. 11th edition. © 2013.
Published by Radio Society of Great Britain

*** Plus postage and packaging**

VK6news

Keith Bainbridge VK6RK
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Greetings and welcome to the March edition of VK6news.

Well, I must have stirred up the pot last month because I have had huge input this time from many sources around WA! We will start with a fine effort by the Peel Group.

VI6WA100 PARG at the Shipwreck Galleries

Saturday, 7th December, 2013 saw Peel Amateur Radio Group (PARG) members activate the WIA Centenary callsign from the Maritime Museum Shipwreck Galleries at Fremantle, close by the Esplanade in the historic West End. Built by convict labour in the 1850s the building now houses hundreds of artefacts recovered from the seas off Australia's west coast. Perhaps the most complete is the partially rebuilt wreck of the VOC ship Batavia, lost off the Abrolhos Islands in 1629 and recovered in the 1970s. See *www.wa.gov.au/museums/shipwrecks*

The previous day had seen some distant thunder rumble past, but Saturday dawned bright and clear and at 0930 members Rex VK6SN, Clive VK6TN, Nick VK6FNIC, and their respective wives, together with Tom VK2LBT, met on the grassed frontage of the Museum to set up the communications trailer which Nick had hauled from our base in Mandurah.

We were soon joined by visitors Marty VK6FDX and Martin VK6ZMS. Marty stayed with us throughout the day and offered his services as relief operator. This offer was gratefully accepted as it allowed PARG members to take longer breaks for chin-wagging, refreshments and so on.

Our timing was perfect. As we arrived museum staff, as promised, were lifting the bollards to give us access to the forecourt and, shortly after, Julia, the duty manager, was with us explaining the do's and don'ts.

Peel Group has developed a good working relationship with the Maritime Museum management following our visit there during the WIA National Conference in 2013. They see our presence on the forecourt as an attraction which draws the public onto their site, thereby potentially increasing footfall into the Galleries, and Peel Group benefits from free access to a clear site (from both the real estate and RF point of view) which boasts high tourist numbers so enabling the group to promote amateur radio to best effect. A further bonus is the presence of several massive iron anchors strategically placed around the forecourt. These provide excellent tie-offs for the trailer mast guys.

Photo 1: PARG on site at the Maritime Museum Shipwreck Galleries, Fremantle.

The assembled members set to bringing the trailer into commission. This can be done by two operators at a pinch, but four to five actively involved seems to be

Photo 2: The PARG communications trailer and gazebo being put to good use.

the optimum provided that some semblance of order can be brought to the proceedings, with their efforts orchestrated by an experienced 'rigger'. Rex is usually volunteered. By around 10.30 we were good to go, with an HF rig ready to feed our rotatable trap dipole at about 16 metres with up to 100 watts of power. We also operated a VHF/UHF transceiver into a vertical collinear mounted above the HF beam, best used to advertise our presence on site through the local repeaters.

Results during mid to late morning were pretty well as expected. The bands we had chosen (20, 15 and 10) were closed, with S5-8 noise when tuning through. No readable stations were heard, so we went to the fallback position, that is, drink coffee, scoff Tim Tams and chinwag, assuring ourselves that things would improve after lunch as the bands opened up.

Calls were made, lunch was taken, and more calls were made but the hoped for response of the world to our special callsign just did not happen. A JA station was heard on 15 metres, a W1 on 20 metres but no contact was made. We did make contact with 12 stations in total, all on the Australian mainland. For me the highlight of the day was contact with Craig VK6VCK/mm who was off Garden Island in his boat combining two great hobbies, amateur radio and fishing. I cannot speak for his bag of fish on the day, but on the radio he was loud and proud throughout our time of operation and was clearly having much more success than us with the QSO rate. Something to do with a vertical antenna and the Indian Ocean as a ground plane I suspect. Scott even acted as Master of Ceremonies trying to link us with one of our members, Stevie VK6SMK who was operating mobile and whom he was receiving S9. Alas, even this was not to be.

In early afternoon a strong south westerly wind began to make our Gazebo dance a frenetic jig. One wag amongst us suggested that it was blowing the incoming signals away from our antenna. At about this time we were joined by Craig VK6FLAM who spent some time with us and took photographs of the station.

And so the day faded. We had two members of the public visit and show interest in the station. The second of these, a young chap clearly new to these shores, after some preamble, got to the point. 'Could I', he enquired, 'use one of these 'HF rigs' to receive BBC Radio One?' There followed a stunned silence, broken by the interjection of his very attractive female companion who proceeded to explain to him, in the manner as of a mother to a child, that 'No, he could not'. She then went on to expand on her understanding of 'ham radio' (her words), and she was pretty accurate. We were so astonished that we did not think to query the source of her knowledge.

We hadn't given much thought to the lack of people, tourists and otherwise, whose presence would normally be expected to make this area one of the busiest in Fremantle on a Saturday afternoon. It was only after overhearing a comment from a passer-by that the penny dropped. We had chosen to operate on a day coincidental with a major evening Festival, a fact underlined by the sight of a massive fast food market being set up nearby as we broke the station down and decamped, and the many folks to be seen queuing at the inbound CAT bus stops as we drove south out of town along Marine Terrace.

Given the meagre contact count you might ask, 'Was it worth the effort?' My answer is a resounding 'Yes' for a variety of reasons.

It was an opportunity to 'prove out' both equipment and operator. Our communications trailer exists as a back-up resource for emergency services. On this outing three minor but potentially crippling defects in the antenna feed and DC power supply were found and fixed.

It was an opportunity to promote the history of amateur radio in Western Australia through the use of the special call, and in this we succeeded so far as propagation conditions would allow.

It was an opportunity to promote amateur radio by demonstration to the public. Did we succeed? I'm not sure, but that's no reason not to keep on trying.

It was an opportunity to cement ties with the Maritime Museum, whose hospitality is very much appreciated.

It was also a social occasion, where members spent time together, yarning, doing a little show and tell and generally enjoying the shared experience.

And lastly, perhaps most importantly, the ladies got to visit the shops and markets of Fremantle.

I would call that a result, wouldn't you? Clive VK6TN.

Sounds like a majorly good time was had, and great publicity for the hobby as well.

Anthony VK6AXB reports that the **West Australian Repeater Group (WARG)** celebrated the 30th anniversary of the Busselton repeater site with a working bee and presentation over the weekend of January 4th and 5th. The site is home to the VK6RBN two metre repeater and packet digipeater, and is also linked to bring WIA News broadcasts to the Busselton area.

The building of the Busselton site in 1983-84 was an impressive achievement for WARG. All materials, including water for the concrete, had to be transported into the site, with no mains power or other facilities available. Foundations were dug by hand, with blasting and jack-hammering where necessary. The first concrete pour took place on December 30th, 1983, and those present on site celebrated New Year's Eve with a party. It is estimated WARG members, many travelling repeatedly from Perth, clocked up a total of 40,000 km over the months it took to build the 50 metre mast and site facilities.

In recent times the repeater's performance has been down, and this occasion was a good chance to make some improvements.

Those attending included Anthony VK6AXB, Graeme VK6LV and Trevor VK6MS, who travelled

from Perth. Site landowners Peter, Beth VK6EL and Alan VK6AJH made us very welcome, and we were joined by local amateurs Michael VK6TU, Nick VK6YNE, Phil VK6SO and Shaun VK6FSAP.

The mast was climbed and inspected, a faulty antenna replaced, and foliage trimmed clear of guy wires, to reduce the fire risk. Performance tests on the repeater and news link system were done, and the solar and battery operation checked.

As part of the proceedings, a certificate of appreciation was presented to land owners Alan, Beth and Peter, and group photos taken, including of the four attendees who were a big part of the original site build in 1983 - Alan, Beth, Peter and Trevor. Tribute was paid to the many others who had worked building the site, including VK6s YL, UU, LZ, ZLZ and ACP.

Work remains to be done on the news linking system, but the repeater's performance on the new antenna is significantly improved. If anyone's travelling in the area between Bunbury and Margaret River, WARG would appreciate further signal reports, to *www.warg.org.au* or call in to our Sunday morning Technical and General net, 1030 local on repeater 146.750.

NewsWest is up next with this report from Bob VK6POP.

Late last December, to mark the end of the Centenary year of organised amateur radio in Western Australia, the NewsWest team produced a special broadcast of historical news items, using the original VK6 News callsign VK6WI. The programme was recorded live the day before the broadcast.

We began with an article from Perth' Daily News, dated 18th September 1913, reporting the formation of the Western Australian Radio Club.

The article read: *'An enthusiastic and well attended gathering of persons interested in radio-telegraphy took place at the residence, of Mr A Sibly, Park Street, North Perth, on Monday evening, the 15th inst.*

Photo 3: WARG members on site at their Busselton repeater.

After considerable discussion it was decided to form a club, which would be known as the W.A. Radio Club. The following officers were elected: Chairman, Mr T W Ellison, vice-chairman, Mr W E Coxon, secretary Mr G W Dean; committee, Messrs McKail, Coxon, Sibly, Read and MCallum.

The objects of the club will be as follows: To give the necessary instruction to those who need it. To enable experimenters to visit up-to-date private stations, where they will learn more in one hour than would be possible with weeks of book instruction. The imparting of scientific knowledge in the form of lectures by qualified members. A means whereby a member experiencing difficulty over any portion of his instruments can bring same to the club, and have it tested and improvements shown him. It was also decided that on request being made a member of the committee will visit a private station and offer free advice as to the arrangement that will give the best results according to conditions.

Radio clubs are in existence in all of the most important countries of the Western world, and judging by the keenness displayed here the newly formed Westralian club should flourish.'

We had enough material to produce a show of two hours duration, and had to cruelly cut it back, and even then it went for 45 minutes, the longest programme we have produced, however we were forgiven for the time grab and congratulated on the content.

NewsWest produces a weekly programme of news about Western Australia, for Western Australian amateurs and radio enthusiasts. The *vk6.net* website contains information about NewsWest and other local information about amateur radio in Western Australia. NewsWest goes to air immediately after the National News on Sundays.

I'm delighted to report the **VK6 Foxhunts** have been rediscovered by a new generation of Foxer's, here's a report from Rob VK6LD

The first fox hunt to be held in about 10 years took place on Saturday 18 January 2014. The hunters gathered at the Kings Park start point included:

VK6AXB Team: Consisting of Anthony VK6AXB, Duncan VK6GHZ, Gavin VK6HGR and Doug VK6DB.

VK6RC Team: Consisting of Marty VK6RC and Martin VK6ZMS.

VK6TWO Team: Consisting of Heath VK6TWO and Monique VK6FMON.

VK6FJON Team: Consisting of John VK6FJON and Allan VK6PWD.

VK6XCJ Team: Consisting of Christie VK6XCJ and offsider/ navigator Jet.

VK6FADF Team: Consisting of Dennis VK6FADF and family.

Due to the traditional start point at the car park of the Pioneer Women's Memorial Fountain being busy on a hot Saturday night, hunters relocated the start point to the Roe car park, approximately 200 metres south. The fox was Rob VK6LD, Rick VK6XLR and Jude VK6FJUD.

After check-ins were taken, the fox was switched on at 7.32 pm. The fox was hidden in bushes right on the Swan River, just near the boat ramp at the tip of the Maylands

Peninsula. Transmitting off a 1/4 wave handheld antenna, the fox put out a good signal along the Farmer Freeway and Great Eastern Highway in Rivervale and Belmont. The fox saw more than a few torchlights on the shore on the opposite side of the river from hunters looking for the hidden transmitter. Eventually most teams worked out the fox was on the opposite side of the river (an old fox's trick!) and made their way through the back streets of Maylands to find the foxes enjoying themselves riverside on deck chairs enjoying a warm Perth evening.

Snoop loops and other receiving equipment were deployed and most teams soon found the fox tucked into some bushes on the banks of the Swan River. First to arrive was the VK6TWO team (Heath & Monique) in 63 minutes and 25 km. Second to arrive was the VK6AXB team (Anthony, Duncan, Gavin and Doug) in 67 minutes and 27 km. Third was the VK6RC team (Marty and Martin).

Arriving later (with a few clues given) were teams VK6FJON, VK6XCJ and VK6FADF.

With the positive experience from the first fox hunt, some hunters agreed to a second fox hunt that night and returned to Kings Park, whilst the fox sought a new hide, this time a park in one of the elevated subdivisions in Dianella.

Hunters set off from Kings Park again at 10.17 pm and the first to find the fox was the VK6AXB team at 11.07 pm. The fox was found hidden in group of trees, behind a limestone wall. The VK6TWO team retired midway through the hunt, being required for domestic duties. Some clues went out to a couple of disoriented hunters, so the fox wouldn't have to launch a search and rescue mission. Next in were the VK6RC team, Marty and Martin in Marty's white van (with a resemblance to the twins on the SBS TV show Swift & Shift Couriers), followed by the VK6FJON team.

The fox was packed up around midnight and all hunters agreed it was a thoroughly enjoyable night. Tentative date set for the next fox hunt is mid-March 2014 and if available, the fox will be the VK6TWO team. Expect something tricky if this is the case!

Some photos of Saturday's event will be published on the VK6FOX website *http://www.vk6fox.org.au* and of course for all your VK6 fox hunting information, please check the website regularly and sign up to the mailing list. 73 from Rob VK6LD.

Now it's the turn of the Hills Group!

News from **HARG - The Hills Amateur Radio Group.**

At our General Meeting on Saturday 22nd February, Mal VK6LC presented a fascinating video of the rare VK9RS Rowley Shoals DXpedition in 1999. The video ran for one hour and covered the huge task of moving two tonnes of DX gear 2,300 km to Broome then another 260 km of sea travel to Cunningham Island-Imperious Reef, then running two kW stations for five days including 11,000 QSOs on SSB/CW. The DXpedition won the WIA and Overseas Islands DXers top awards for 2000. This month the club will take part in the John Moyle Field Day over the weekend of 15th and 16th of March. Other events planned for this year include a talk on slow scan TV in April, our annual HARGfest in May, a visit to the ABC transmission site in Hamersley in June, our Annual General Meeting in July, a talk on satellite and ISS communication in August, how to connect your radio to your computer in September and a talk on D-STAR operation in October. We will also take part in the RD Contest in August. Please keep in mind that dates and events may change due to unforeseen circumstances but we will keep you up to date during the year.

Unfortunately I now have to announce that due to recently changed work commitments our President Martin VK6ZMS has been forced to step down from his position. Thank you Martin for the tireless energy you have put into HARG. The committee hopes that you do not stray too far. We will be actively seeking a new President but be assured that in the meantime we have a very competent committee who will continue their good work on behalf of the members. Meetings are held twice a month with our social and practical meeting on the second Saturday of the month and our General Meeting often with a technical talk on the last Saturday of the month. Doors open at 1.00 pm for a 2.00 pm meeting start. More information is available at *www.harg.org.au* Cheers and 73 until next time from Bill VK6WJ, for HARG.

I've had to hold over a report on the Kattanning hamfest till next month with pictures to follow, due to the bumper input this month.

Finally from the **NCRG.**

The NCRG along with Alek VK6APK has been involved with the FT5ZM DXpedition to Amsterdam Island which will have finished by the time you read this. We were approached to assist with providing ten nine metre towers, antenna patch boards, ground stakes, medicinal supplies and many other bits and pieces which we duly provided.

When the team arrived in Perth we attended a BBQ at Steve VK6IR's place and met the crew and also Nigel the owner of the MV Braveheart that was taking them there. It was great to meet so many famous DXpeditioners and to discover what a great bunch of guys they all are. We were delighted to be of assistance and as they went on air two days ago as I write this, to see our towers on the website makes interesting viewing. I hope we get them back!

I will leave it at that for now, as I said I will keep a couple of articles over till next month to allow all this to be printed along with the excellent pictures submitted.

73 for now Keith VK6RK.

VK7news

Justin Giles-Clark VK7TW
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w *groups.yahoo.com/group/vk7regionalnews/*

Photo 1: The historic Ross Bridge in VK7's picturesque midlands, built in 1836 by convicts. Photo courtesy of Justin VK7TW.

Meet The Voice BBQ

Correction - last month I stated the 2014 'Meet the Voice' barbecue was to be held on Sunday, 22 March, 2014; this is incorrect: it will be held a week earlier on Sunday, 16 March, 2014.

This event is hosted by the Sewing Circle Net and is held in the picturesque midlands township of Ross in the caravan park next to the Macquarie River. Presentations start around 11 am EDST and the barbecue around noon. Registration is $5 per amateur licence holder and family with all profits from the event going to repeater maintenance around VK7. Claureen VK3KMB and Dave VK3JKY from TTS Systems will be coming along so let them know about any goodies you would like them to bring across the pond.

Repeater news

The big news in Tasmania at the time of writing is the return of a repeater on Mt Wellington at 1,270 metres ASL in southern Tasmania. Hayden VK7HA and Michael VK7FMRS have been working hard to get the latest NTARC repeater up and going. VK7RTC is currently a 70 cm repeater on TX: 439.825 MHz, and RX: 434.825 MHz with a 123 Hz CTCSS tone for local operation and 141.3 Hz CTCSS tone for linking north. Hayden is interested in coverage reports at email *haydenph91@gmail.com* An APRS digipeater and two metre repeater is also planned and at the time of writing it was being tested.

Northern Tasmania Amateur Radio Club

Congratulations to George Christie VK7FMCA from the first Foundation licence course held in the new NTARC clubrooms. We also congratulate Clif Hunt VK7CH who

Photo 2: The new freshly galvanized replacement VK7RMD tower ready to airlift into place. Photo courtesy of Dion VK7DB.

is sporting his new callsign. NTARC Education Officer Peter VK7PD will have started a six week upgrade course by the time you read this report. The NTARC January BBQ meeting had a great attendance and the BBQ was fired up and enjoyed by everyone including special guests Bryn VK7FBAW and Kevin VK7FKA. The traditional homemade cakes finished off the afternoon.

North West Tasmanian ATV Group

The Spectrum Tasmania website has been updated with new information about the nightly video and audio broadcasts, many of which are on demand. The URL is: *http://www2.vk7ax.id.au/spectrum/* If you are interested in amateur radio assessment in the NW of VK7 then contact the NWTATVG Learning Organizer Tony VK7AX at *vk7ax@vk7ax.id.au*

Cradle Coast Amateur Radio Club

Cradle Coast members led by Dion VK7DB have built a very sturdy replacement tower for VK7RMD on Mt Duncan. The tower has been welded together and galvanised and is ready for placement on the mountain using a helicopter. There is also a new 1 kW solar panel array to be lifted into place on Mt Duncan which will cover current and future power requirements. A big thank you to all involved.

Radio and Electronics Association of Southern Tasmania

The REAST committee is excited to announce that Icom, along with REAST will be conducting a field day on the 15th of March from 10 am. Icom will be bringing with them a broad range of amateur communications gear for what will be a very 'hands on' field day of their wares. Everyone is invited to attend and after the field day we will be putting on a free sausage sizzle. If you are interested in test driving a piece of Icom kit, let Tony VK7VKT know at *president@reast.asn.au* and he will see what can be done.

Our DATV Experimenter's nights have been a huge success with great attendances and some interesting topics. We have a newly integrated remotely controlled hi-res studio camera from various generous sources and thanks to VK7TP and VK7ZGK. Our topics included a 630 metre antenna tuning unit, Marconi T antennas, RF burns... HiHi, multi-channel LIPD controllers and an RPi expansion board. Ben VK7BEN took us through reflashing his Canon EOS digital SLR camera with the Magic Lantern software and its capabilities, Rex VK7MO took us through his recent trip to VK3, VK5 and VK6 to set up and work Derek VK6DK and break the 10 GHz digital record across the Great Australian Bight. Thanks guys! Our video presentations included the visit by Tasmania Police Bomb Response group, Arduino and Raspberry Pi (RPi) projects and Ham Radio Now episodes, thanks to Gary Pearce KN4AQ.

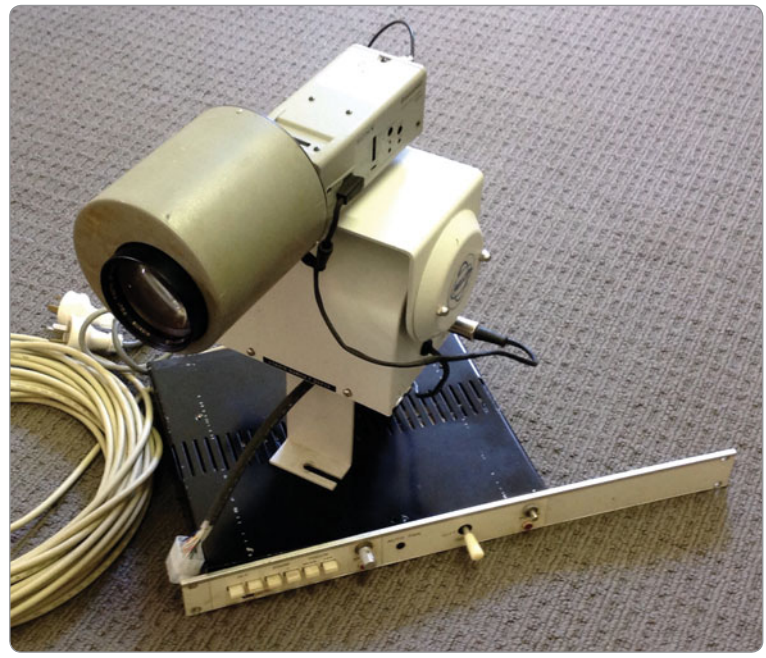


Photo 3: A remotely controlled hi-resolution DATV studio camera. Photo courtesy of Justin VK7TW.

SOTA News

Allen Harvie VK3HRA and Bernard Petherbridge VK3AMB

Hi all.

Here we have some interesting statistics from Wayne VK3WAM demonstrating the interest and growth in SOTA and proving amateur radio is far from dead.

2012

- 1,249 activator points across 19 activators
- 212 activations averaging 11.2 activations per activator
- 169 CW activator points
- 28 CW activations averaging 5.6 CW activations per CW activator
- 40 chasers registered in SOTA database with 4,155 chaser points

2013

- 6,717 activator points across 95 activators
- 1,479 activations averaging 15.6 activations per activator
- 415 CW activator points
- 82 CW activations averaging 7.5 CW activations per CW activator
- 137 chasers registered in SOTA database with 77,706 chaser points logged

Wow, wish my super was growing at those rates!

The start of 2014 is maintaining this trend. It had already been a busy month starting with New Year and culminating on Australia Day. Most of us were on holidays therefore SOTA became a weekday and weekend activity.

The New Year started with great enthusiasm for SOTA. The New Year rollover presents an opportunity for activators to claim points for activation both pre and post UTC. During the daylight savings period, the daily switch over is at 11:00 am for eastern VK and chasers have long taken advantage of this to 'double dip' for morning activations. With the New Year switch over, activators were able to claim an activation in two different years. Many took advantage of both this situation and the milder weather to activate a summit. The resulting activity was well received by a strong chaser community as over the course of the day, 24 activators operated from 32 summits.

Summer in VK also brings the holiday season and many incorporated a SOTA activation or two into the usual week of camping. As Chasers were also available during the day, the activity was strong. Summer comes with the fire season however, and fires have already put favourite parks off the 'safe to activate' list. Fortunately as the New Year places all summits back on an Activators to-do list, there are enough opportunities for people to venture outdoors without placing themselves in danger or hindering fire fighting activities.

Australia Day also occurs in the holiday period and with it the annual airing of the AX prefix, so many thoughts were focussed on a celebratory SOTA expedition.

As a result, plans were laid and compromises made with XYLs. The weekend came and the weather was perfect, a welcome relief from a recent hot period which lead to several parks being closed. There were many activators who took advantage of the conditions and made it out over the long weekend resulting in non-stop chasing for the sloths. There were 22 activators completing 59 distinct activations over the long weekend, with 16 separate activators completing 40 activations on Australia Day alone.

The use of the AX prefix for our call signs provided more issues than expected. There were constant instances of stuff-ups where activators kept reverting to the VK prefix. You would think this was a simple task but it proved to be quite difficult and as a result quite entertaining. Call sign confusion aside, it was a great day with S2S, DX, multiband and national park activations galore. The Summit to Summits proved lucrative and several activators (VK1DA, VK2DAG, VK3ANL, VK3ARR and VK3MCD) achieved DX contacts despite some very variable band conditions.

We are now expecting activity to slow down with the return to work and school but despite the sweltering weather, SOTA is very much alive and well in VK.

Silent Key

Jack Baldock VK7JF

It is with sadness that we report the passing of Jack Baldock VK7JF on New Year's Day 2014.

Jack was licenced in the late 1970s at which time he lived and operated the service station and roadhouse at Derwent Bridge. At that time he was a very keen 80 and 10 metre experimenter and operator. He was well known on the Sewing Circle Net in the early 1980s, with his quick wit, technical questions and revelations.

Jack was a regular attendee at the WIA VK7 Southern branch meetings, in those days held at Melville St, Hobart. Peter VK7PL recalls often seeing Jack sorting through a handful of QSL cards during the meeting, which further attested to his operating activity.

Sometime in the 1980s Jack 'retired' to Salt Water River and Jack had regular skeds on both 80 metres and then Skype with good friend Barry Frazer VK7FR.

Born on 6 April, 1930 Jack passed away on New Year's Day 2014.

Vale Jack.

Contributed by Peter VK7PL and Barry VK7FR via Tony VK7AX.

DX- News & Views

Chris Chapman VK3QB and Luke Steele VK3HJ
e *vk3qb@wia.org.au*

January on the bands

Welcome to a new year of DX!
2013 was a good year for DX, with around 286 DXCC entities active. There were also many DXpeditions both large and small that were on air through the year. With over a hundred one or two-operator expeditions, and more than 25 large scale operations, there was no shortage of DX for those who looked for it. The CQ DX Marathon was well supported again, with nearly 500 entries from around the world, including ten from Australia. All the big contests were well supported throughout the year, with good to very good conditions reported.

This year started off a little quieter than last year, but there was still plenty out there for those who spent some time in front of their radio tuning the bands. Early January saw a fairly active sun, and the middle of the month was mostly quiet. Late January into early February saw a high level of solar activity, with old sunspot 1944 returning, and re-numbered 1967. There were around two-dozen M-Class solar flares, mostly associated with sunspot 1967.

On air were H40TA from Nendo I in the Temotu Province of the Solomon Islands, S79ACR Seychelles, FW5JJ Wallis and Futuna I, 8Q7SM Maldives, E51CDW from Rarotonga, in South Cook Islands, KG4AS and KG4SS Guantanamo Bay (Cuba, but separate entity), EP3HF Iran has been workable late evenings on 15 m, V6P Micronesia, S9TF Principe I (Sao Tome and Principe), TY1TT Benin, A52JR Bhutan. PY0F/PP1CZ Leo was active on many bands from Fernando de Noronha I, and took the time to work a few VKs. 1A0KM was on from Sovereign Military Order of Malta, HQ in Rome, and didn't make much of an effort to allow VK to work them. HV0A Vatican City also was briefly on air, and Francesco did call for different areas of the world, including VK. UA4WHX Vlad continues to pop up from different South American islands, including Juan Fernandez (CE0Z)!

The biggest event of the reporting period was the

Some upcoming DX operations

The following table summarises some of the DX activations that may be of interest to VK operators.

Date	Call	QSL via	Information
21 Feb – 10 Mar	J7Y	K1LI	Dominica (NA-101). K1LI, for ARRL DX SSB contest, low bands outside contest.
26 Feb – 8 Mar	3C0BYP	EA5BYP	Annobon I (AF-039). EA5BYP, SSB, CW.
1 – 11 Mar	VK9X/K7CO	K7CO	Christmas I (OC-002). K7CO, 80 – 10 m, SSB, CW, PSK-31.
1 – 28 Mar	PZ5VC	ON4AVT	Surinam. ON4AVT, mainly PSK.
2 – 17 Mar	P4/WA2NHA	WA2NHA	Aruba (SA-036). WA2NHA, HF, CW.
3 – 10 Mar	J34G	G3PJT	Grenada (NA-024). G3PJT, for RSGB Commonwealth contest, holiday style before contest.
4 – 19 Mar	PJ6	KB8RJ	Saba and St Eustatius, Saba I (NA-145). KB8RJ and WD8KUR, HF.
10 – 23 Mar	4S7	LotW	Sri Lanka (AS-003). Team of eleven, 160 – 6 m, CW, SSB, RTTY, PSK-31.
12 – 29 Mar	PJ2/DK5ON	DK5ON	Curacao (SA-099). 80 – 6 m, all modes.
13 – 19 Mar	P4	Home call	Aruba (SA-036). JR3QFB as P40JH and JS6RRR as P40R, 160 – 6 m, all modes.
10 – 28 Mar	ZL7/OE2SNL	OE2SNL	Chatham I (OC-038). 80 – 10 m, mainly RTTY, some CW.
14 Mar – 11 Apr	5H3MB	LotW	Tanzania, Ilembula. IK2GU.
15 – 22 Mar	ZF2MT	LotW	Cayman I (NA-016). W4VAB, HF, CW, PSK-31l
19 Mar – 1 Apr	VP2V	Home Call	British Virgin I, Anageda (NA-023). Team of five Polish operators, 160 – 6 m, SSB, RTTY, CW.
20 Mar – 1 Apr	TX6G	LotW	Austral I, Raivavae I (OC-114). Team of seven British operators, all bands, CW, SSB, RTTY.
21 Mar – 4 Apr	TO7BC	DL7BC	Mayotte (AF-027). DL7BC, 20 – 10 m.
23 – 30 Mar	VU4K	W4VKU	Andaman I (AS-001). HF, SSB, RTTY.
28 Mar – 9 Apr	VK9MT	M0URX	Mellish Reef (OC-072). Team of eleven ops, 160 – 10 m, CW, SSB, RTTY.

Amsterdam Island DXpedition, with the team doing a great job, and good signals on all bands. They are set to make well in excess of 100,000 QSOs, with around 90,000 in the log already with over a week to go!

The ARRL Centenary Year sees many special W1AW/P stations around all states throughout the year. To commemorate the Winter Olympic Games in Sochi, Russia, many special event stations are on air, with'22' in the prefix. Take care when logging these stations, as some will be in Asiatic Russia, when your logging program may indicate Kaliningrad or European Russia.

On 160 m, Asia has been good in the evenings in VK3, and Europe should start appearing our mornings. 40 and 30 m has been quite good mornings and evenings. Keep an ear on 15 m as that has been a very good band as we enter the second peak of Cycle 24. 12 and 10 m have been patchy, but always worth a check.

J7Y, **Dominica.** Brian K1LI will be QRV for the ARRL DX Phone contest, but will also focus on low bands before and after the contest.

3C0BYP, **Annobon I**. Elmo EA5BYP will be SSB, RTTY, and some CW. He is only new to CW, so be patient and slow down when calling him. Elmo hopes to also be active from Bioki I (AF-010) Equatorial Guinea before and after Annobon, with the callsign 3C4BYP.

VK9X/K7CO, **Christmas I.** Jon K7CO plans to be on 10 – 10 m, SSB, CW and PSK-31. For more information see: *http://www.nielsen.net/vk9x/*

PZ5VC, **Surinam**. Willy ON4AVT will be on air with PSK-31/63 using his FT-857 and a Buddipole.

P4/WA2NHA, **Aruba**. Howard WA2NHA plans to operate using CW on HF.

J34G, **Grenada**. Robert G3PJT will operate in the RSGB Commonwealth Contest (8 – 9 Mar), and holiday-style outside the contest.

PJ6, **Saba & St Eustatius**. John KB8RJ and Cristina WD8KUR plan to operate holiday-style, using HF, with dipoles and a Buddipole.

4S7, **Sri Lanka**. Sigi DL7DF and crew, including DK1BT, DH7KU, DJ6TF, DK1BT, DK7LX, DL4WK, DL7UFN, DL7UFR, SP3CYY and SP3DOI will be operating with a callsign TBA. They will be on 160 – 6 m, CW, SSB, RTTY, PSK-31, with four stations. QSL also OK via DL7DF, bureau or direct. For more information see: *http://www.dl7df.com/4s7/index.php*

PJ2/DK5ON, **Curacao**. Andy DK5ON will be on 80 – 6 m, using SSB, RTTY, PSK and CW. For more information see: *http://qrz.com/db/DK5ON/PJ2/DK5ON*

P4, **Aruba**. Yoshi JR3QFB and Take JS6RRR will be using the callsigns P40JH and P40R respectively. They plan to operate 160 – 6 m, all modes.

ZL7/OE2SNL, **Chatham I**. Franz OE2SNL will be operating on 80 – 10 m, with a focus on RTTY. He will also use CW. For more information see: *http://www.oe2snl.at/zl7-oe2snl-2014/*

5H3MB, **Tanzania**. Maurizio IK2GZU will be returning to Ilembula. For more information see: *http://www.qrz.com/db/5h3mb*

ZF2MT, **Cayman I**. Hugh W4VAB will be on HF, using CW and PSK-31.

VP2V, **British Virgin I**. Bogdan SP2FUD, Kazik SP6AXW, Leszek SP6CIK, Janusz SP9FIH and Robert SP9WZS will be operating as VP2V/home call from Anageda, on 160 – 6 m, using SSB, RTTY and CW. For more information see: *http://www.vp2v.dxpeditions.org/*

TX6G, **Austral I**. G3BJ, G3SVL, G3TXF, G3WGN, G3XTT, G4JKS and G4TSH will be operating from Raivavae I, all bands, CW, SSB and RTTY. They will have three stations, each with K3 and amplifier, and beach vertical arrays. QSL also OK via G3TXF and ClubLog OQRS.

TO7BC, **Mayotte**. Hartwig DL7BC will return to Mayotte with operation on 20 – 10 m, and maybe 40 m.

VU4K, **Andaman I**. Krish W4VKU will be on air from Port Blair, on HF, using SSB and RTTY.

VK9MT, **Mellish Reef**. A team of eleven operators, including Norbert DJ7JC, Heye DJ9RR, Pista HA5AO, George HA5UK, Luigi IV3YER, Dave K3EL, Gene K5GS, Glenn KE4KY, Luke VK3HJ, Les W2LK, and Mike WA6O will be operating 160 – 10 m, CW, SSB and RTTY. The team is scheduled to depart from Mackay on 25 March for 2-3 days sailing to Mellish Reef. Up to six stations running continuously for ten days should hopefully satisfy the current need for this entity. For more information see: *http://vk9mt.com/*

Special thanks to the authors of The Daily DX, 425 DX News, DX World, NG3K's Announced DX Operations, and QRZ.DX for information appearing in this month's column. Interested readers can obtain a free two week trial of The Daily DX from *www.dailydx.com/trial.htm*

Attend

EMDRC White Elephant Sale | 23 March

See details on page 13

VHF/UHF - An Expanding World

David Smith VK3HZ
e *vk3hz@wia.org.au*

Weak signal

Firstly, an administrative note. John VK5PO has advised that he is no longer able to do the six metre notes. I'd like to thank John for his valuable contribution to the column. If anyone else would like to step into the role, please contact me at the email address given above.

Last month I reported a distinct lack of Sporadic E propagation on two metres for the period to December 31. January has followed the same trend with no reports of contacts via Sporadic E. No doubt the Sun's activity has a lot to do with this – recently it was reported that the Sun's magnetic poles have reversed, marking the mid-point of the current solar cycle. I can feel a Roger Harrison presentation coming for the next GippsTech conference in July.

In contrast, tropospheric propagation has not been lacking, with a number of slow-moving, intense high pressure cells moving into the Bight, then either crossing southern NSW across to the Tasman Sea or squeezing through Bass Strait and entering the Tasman from further south.

On the evening of January 11th, Derek VK6DZ/P was portable on the southern tip of VK6. He reported hearing the VK7RAE 70 cm beacon from Devonport (2590 km) a number of times at 4x1. Unfortunately, no contact resulted.

Derek was attempting to work Rex VK7MO at the north-eastern tip of Tasmania on 10 GHz via a large high-pressure zone in the Bight. While that attempt was unsuccessful, Rex did manage to work Colin VK5DK on 10 GHz at his home QTH in Mt Gambier on SSB with a 5x8 report – a distance of 706.8 km. This set a new VK7 state record for 10 GHz.

On the evening of January 16, Ralph VK3WRE was out portable in central Gippsland and worked Nick ZL1IU on 70 cm with a report of 5x1.

The following day, January 17, Rex VK7MO was experiencing good conditions, this time from his home QTH. At 0020Z, he worked Steve ZL1TPH/P on 70 cm at 5x2 and at 0055Z; he worked Nick ZL1IU on 70 cm with a 5x3 report over a path of 2433 km.

On January 18, Ross VK2DVZ worked Bob ZL3TY on 23 cm SSB (4x1) for the first time for a few years, after a struggle with the QSB. This path is a little more difficult than to the north of NZ, because the enhancement tends to move further northwards as it enters the Tasman.

The following morning, January 19, conditions across the Bight were huge and Leigh VK2KRR was hearing strong signals from VK5 and VK6. At 2105Z, he worked Ron VK6VOX on two metres at 5x5 – 2707 km. At 2310Z, Leigh worked Wayne VK6JR on two metres SSB with a 5x9 report over a distance of 2935 km. Wayne also worked Jim VK3II (5x1) – 2778 km, and Mike VK3KH (5x1) – 2745 km.

On January 29, more good conditions across to ZL. Steve ZL1TPH/P had again travelled to his portable location, working Ross VK2DVZ on 23 cm (5x3). Ross also worked Steve ZL1AVS on 23 cm (5x3).

Once again, Steve ZL1TPH/P featured prominently in the action across to NZ. He worked a large number of VK stations on two metres, 70 cm and 23 cm. He reports:

On my second trip to the north in January 2014, I activated RF63 and RF65 to VK. The reason for the trip was to take advantage of the duct which appeared to favour the north of ZL, along with activating these two grid squares that are not that commonly operated from, also to have a holiday with some radio fun added. All contacts are with SSB unless noted otherwise.

Day 1 - Thursday 16 January 2014; drove to RF63 worked VK2IJM, VK2DVZ, VK2AH, VK2ARA, VK2GKA, VK2BCC, VK2KOL, VK2TK on 144, then carried on north and booked into the Kaitaia motel, which BTW is in RF64.

Day 2 - Friday 17 January 2014; drove to the top of ZL, RF65 and worked VK2ARA, VK2DVZ, VK2ZT, VK2NC, VK2MAX, VK2AH, VK2IJM, VK2BXT, VK2BCC, VK7MO, VK2GKA and VK2TK on 144, on 70 cm VK2ZT and VK7MO, and VK7MO with JT65.

Day 3 - Saturday 18 January 2014; drove back up to RF65 and this was the best day with a pipe into VK2, working VK2AMS, VK2DVZ, VK2ZQ, VK2ZT, VK2ARA, VK2AH, VK2KOL, VK2BCC, VK2BLS, VK2MAX, VK2BXT, VK2BZE, VK2NC, VK2FLJD, VK2IJM, VK2TS, VK2TK, VK2BCC, VK2BJ, VK2HLXand VK2GKA on 144, on 432 VK2DVZ, VK2ZT, VK2AH, VK2ARA, VK2BXT and VK2BZE, on 1296 VK2ZT and VK2DVZ; also worked VK2DVZ on 1296 JT65. Of note, heard the Dural VK2RSY 1296.420 MHz beacon

Photo 1: ZL1TPH/P antennas for two metres, 70 cm and 23 cm.

for a number of hours. The beacon wobbles a bit with the CW but no complaints from this side of the pond because I used it to align my dish on VK2.

Day 4 - Sunday 19 January 2014; left the Kaitaia motel and drove back down to RF63, and worked VK2ZT, VK2IJM, VK2AH, VK2BCC, VK2NC, VK2BXT, VK2KOL and VK2MAX on 144, on 432 VK2BCC only, of interest while running JT65 towards VK4 was seen by VK4EDD and his report back on the logger confirmed to me that he saw me because he reported back to me what I was sending without anyone knowing beforehand, also worked VK2KOL on JT65.

A good four days activity. I'm sure I spent more time driving than operating, but with tropo ducting you can only work so much in so many hours or in one half day and it's nice to get back to the comforts of home or the motel each evening, because operating many bands out of a car or wagon can be stressful at the best of times, and tiring. I had 3.4 and 2.4 GHz just in case but never used. Found having WSJT capabilities added the interest of doing something different and have learnt a lot by doing so.

On 23 cm, I use an old MMT feeding a 10 watt brick then into a W6PQL 150 watt PA. On the hill or portable it's good for 100 watts or so, because I use the same 24 volt battery bank to power my 144 PA; volts do drop after a while with most activity on 144. It has a low noise preamp build by Kevin ZL1UJG, and the four metres of coax to the dish has 0.9 dB of loss.

There's an IC-202 on the unit, but set up to use my FT-817 also with a quick swap of coax leads if required. My FT-817 can run all bands, but the idea is to have the TS-700a run 144, the FT-817 run 432 and the 202 run 23 cm.

I encourage anyone to run or operate portable to take advantage of propagation, because I don't have a good home QTH to work VK, so have to operate portable. Up in the far north of ZL, it is magic for DX to VK - when the prop is in that is.

First 24 GHz tropo across Bass Strait and new national SSB records

In late January, the Hepburn charts were indicating red and pink across Bass Strait from 31 January to 2 February. So Rex VK7MO arranged with a number of 10 and 24 GHz operators to be available while he travelled to the north coast of Tasmania.

On the afternoon of January 31, he set up on 10 GHz at Table Cape in QE29 and soon worked Alan VK3XPD, David VK3HZ, Rob VK3MQ, Rhett VK3GHZ and Colin VK5DK (and later David VK5DG who was running only 200 mW) with signal levels up to S9+. A 24 GHz test with David VK3HZ initially showed no indication of

Photo 2: VK3HZ at Johns Hill with thick inversion layer on horizon.

propagation but by running a 1270 Hz single tone and using JT4F, evidence of weak propagation was noted after some 15 minutes. Once a signal was seen both Rex and David were able to slightly peak their antennas (beamwidth of less than a degree on Rex's 114 cm dish) and a JT4F QSO was completed with -14 dB reports both ways. They continued with JT4F until the signal peaked and it was possible to complete an SSB QSO 5/1, 5/2 for a new national record of 339 km.

The next day (February 1), Rex set up at Dion VK7DB's family farm in QE28 and again 10 GHz was wide open with 5/9 plus signals to VK3HZ. David VK5KK in the Adelaide Hills ran a 10 GHz test with Rex and while both stations decoded callsigns, the band collapsed and a QSO was not completed. The band remained open to VK3 with Rex working VK3QM and VK3HZ on 10 GHz with a three way QSO without the need to turn antennas. Rex then undertook 24 GHz tests with David VK3HZ and later David VK3QM but nothing at all was seen on 24 GHz and a later test on 10 GHz showed that signals were now much weaker but still 5/9. It seemed that the peak time had passed and that they should have moved to 24 GHz earlier in the morning.

On Sunday February 2, Rex moved to Devonport in QE38.

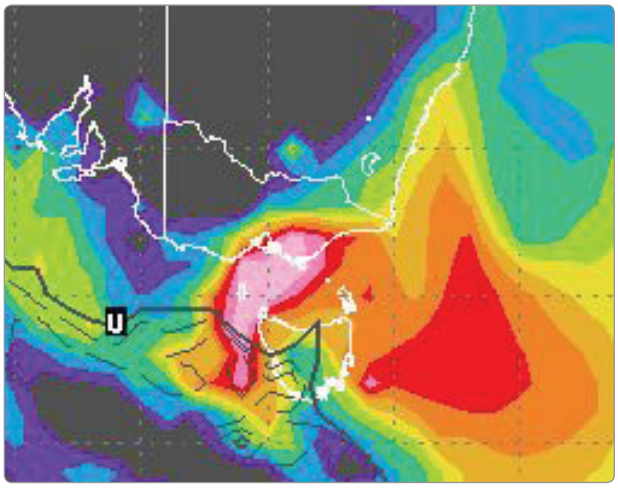


Photo 3: Hepburn chart for January 29.

David VK3HZ was again at John's Hill in the Dandenong Ranges and reported seeing a solid inversion layer in the VK7 direction.

This time, they started on 24 GHz. Initially nothing was seen but after several minutes a short single tone peak on 1000 Hz indicated to Rex that David was copying and ready to receive messages.

A JT4F contact was completed with -15 dB reports both ways and they continued with JT4F while they waited to see if the signal would peak. When it did, an SSB QSO was completed with reports of 3/1 both ways to extend the national record to 372 km. JT4F was continued for almost two hours with 100% copy to see if signals would improve but they gradually faded. The JT4F results showed that Rex and David maintained frequency on 24 GHz to generally +/- 2 Hz indicating very little propagation variation. However, it was noted that if either station changed elevation, this changed the path length and introduced Doppler of several tens of Hz.

Their conclusion is that achieving new SSB record distances was greatly assisted by having digital capability (with GPS locking) and the use of single tones on JT4F to monitor propagation conditions and peak antennas.

New ZL two metre beacon

Bob ZL3TY advises:

There is a new two metre beacon, ZL3MHB, operating on 144.286 MHz from a location about 10 km north of Hokitika (RE57mi). It is running 14 W to a horizontal five element Yagi pointing west. It is at 40 metres ASL, about three km inland with a clear view to the west.

We are hoping it will fill a large gap in the ZL beacon network, in particular towards VK.

There is a six metre beacon co-sited and it will be QRV as soon as we can sort out an unexpected licensing problem.

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au.*

Digital DX Modes

Rex Moncur VK7MO

144 MHz digital record

During the morning of the 19th January, Wayne VK6JR at Dunsborough WA and Leigh VK2KRR at The Rock, NSW, extended the 144 MHz digital modes record. The previous record was the 2664 km path between Derek VK6DZ and Leigh VK2KRR. This has now been extended to 2933 km when VK6JR completed a JT65b contact with VK2KRR. Signal strengths were as strong as -2 dB at Leigh's end from Wayne's 10 watts. Equipment at Leigh's end currently is 4 x 17-element Yagis on 12.2 metre booms at 24.4 metres above ground. At Wayne's end he is using a nine element Yagi. On the same morning Wayne worked or heard VK3KH, VK3HY, VK3DXE and VK3II.

432 MHz digital to ZL

On 11 January Steve ZL1TPH was worked by VK7MO on JT4F with signal levels of -12 and -13 dB over a 2389 km path.

Recommended terrestrial procedures on JT65

The default set-up for JT65 is designed for EME and only gives the option of sending an OOO signal report. While such reports are accepted for EME, terrestrial contacts require the exchange of some unknown information usually

in the form of a signal report. For terrestrial records and contest purposes in VK the unknown information must be based on at least two characters. To meet this criterion WSJT provides for the exchange of a two character signal report in dB form which is implemented by double right clicking on the other station's callsign after it is received (this procedure is not intuitive so one needs to practice it). A valid QSO at VHF, as originally set down by Edward Tilton W1HDQ back in March 1957 in the *QST* 'The World Above 50 MHz' column, requires the identification of both callsigns, the exchange of some unknown information and confirmation both ways that the exchange is complete. In line with this definition a valid JT65 QSO at VHF would be of the following form:

Transmitting Station	Message Transmitted
VK1ABC	CQ VK1ABC
ZL2XYZ	VK1ABC ZL2XYZ -27
VK1ABC	ZL2XYZ VK1ABC R-26
ZL2XYZ	RRR

In terms of a QSO it is unnecessary to send 73 but this is often sent as a courtesy so the other station knows that you have received RRR and can move on to work other stations.

Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

Meteor Scatter

Dr Kevin Johnston VK4UH

Having a little time off from the salt-mine over the Christmas and New Year's break was good for the radio activity at this QTH. The latter part of the summer is normally associated with the best of the years VHF propagation, with both Sporadic-E (Es) and Tropo-ducting expected.

Episodes of enhanced propagation have certainly been present but, to date, have been well down this season compared to previous years.

Last month I touched on the use of mixed propagation mode meteor scatter where the traditionally accepted maximum distances achievable can be extended by tropo enhancement at one or both ends of the path. I mentioned the extension of the world record for two metre meteor scatter propagation to a staggering 3377 km between the Canary Islands and Africa where tropo ducting coincided with the Perseids meteor shower in August 2013.

Looking for more evidence of this combined mode of propagation during this year's summer period I participated in a number of skeds with Steve ZL1TPH operating from a number of portable sites on the ZL north island. As I have often complained previously, despite almost three years of trying in the weekend ZL-VK MS activity sessions, I had never previously received a single ping from across the Tasman at this location. Likewise Steve ZL1TPH had never heard VK on MS

On 1st January, a sked was pre- arranged from Steve's portable site at Cape Reinga (RF65jm) at the most north westerly tip of NZ, a site which has seen many VK-ZL records achieved on VHF and microwave bands particularly during the VK9NA activities on Norfolk Island. The site is an eight hour round trip from Auckland and has no mobile phone coverage at all. It's worth looking on Steve's website at *http://zl1tph.yolasite.com* or just google 'ZL1TPH' to see some amazing photographs from this site.

Being beyond mobile, internet or VHF Logger contact, agreement was confirmed in advance on operating frequency, mode, period selection and timing and so on to be used.

Commencing at 2000 strong pings were immediately received in both directions and the contact was completed in less than five minutes, all without the use of the logger or of internet time syncing and only 100 watts at the ZL1TPH end. This contact was an MS personal best for both stations at a distance of 2056 km. A new initial (callsign), a new grid-square and indeed a new DXCC country for us both, using this mode. Review of the Hepburn Chart at that time strongly suggested the high likelihood of tropo enhancement along long sections of the path between Brisbane and Cape Reinga but with no evidence at that time of a

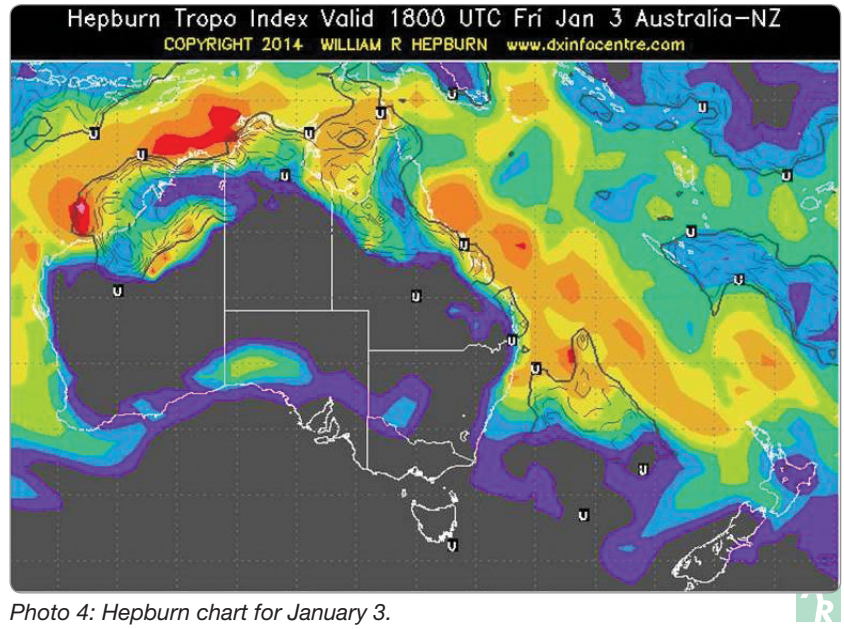


Photo 4: Hepburn chart for January 3.

complete tropo opening between the two sites.

Steve then also completed with Ross VK2DVZ (QF68gd) via enhanced MS.

On 3rd January, another sked was set up with Steve portable from Kaitaia (RF64ou) a distance of 2113 km, a further increase of 47 km. Again two-way MS contacts were completed with myself VK4UH (QG62kp) and with Ross VK2DVZ.

Three hours later a tropo duct did open completely between the two locations. Alerted by continuous FSK441 signals, Steve and I were able to complete a QSO on SSB first on two metres and then on 70 cm. Steve immediately headed north back to Cape Reinga and went on to complete SSB contacts on both 144 and 432 with several other stations including VK4OX, VK4CZ, VK4ARN, VK4AML, VK4IBR, VK4REX and VK4MFJ. Attempts were also made on 1296 but without success. Steve has included photographs, details and Hepburn charts from around these contacts on his website, as above.

On 25 January, Steve and I arranged another sked, this time with him operating portable from the RF73hm grid square - a site closer to his home QTH. Although a far more difficult challenge, a two-way MS contact was finally achieved after 55 minutes over a distance of 2286 km - an increase of 173 km over the previous best again with only 100 watts at the ZL end. The contact was completed using the WSJT- ST mode (Short-Text/ Single-Tone) which I have described in earlier columns. Again a review

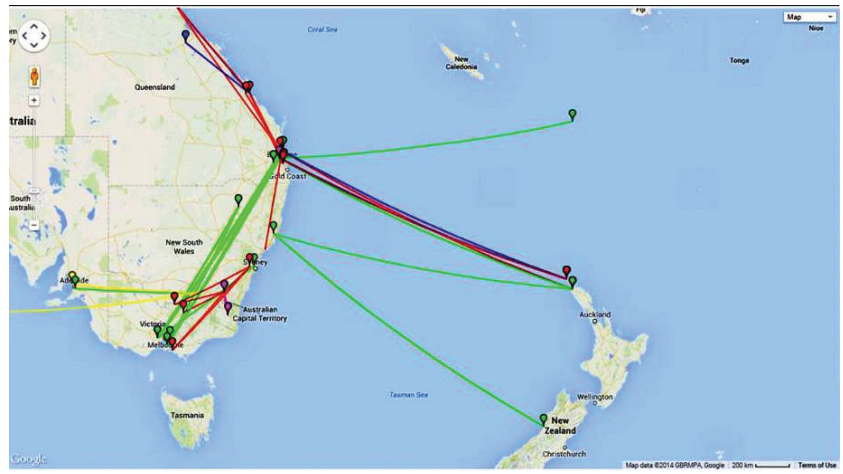


Photo 5: VK Logger map for January 3.

of the Hepburn charts at that time showed a 'pool of yellow' at the ZL end of the path and again the likelihood of tropo enhancement of the MS path.

The take home message here is clear. Tropo enhancement of meteor scatter propagation is real and it is a useful mode for extending absolute distance and in increasing the apparent elevation of signals over obstructions in the path where this would normally be a restriction. Again, keep this enhanced tropo-MS propagation mode in mind at this time of year even when complete openings are not apparent. There may still be enough ducting to bridge the gap, also remembering that there are meteors at all times of the day and night, not just before dawn and not just during the weekend activity sessions.

On another tack, there is again interest in attempting MS paths to stations in the north and far north of Queensland. Currently, to the best of my knowledge, and please correct me if I am wrong, there are no stations currently active on FSK441 from these areas. Again a plea for anyone up in FNQ already equipped for digital operation on two metres, or anyone who would like to get active, to get in contact and arrange some tests with us down south. Only a modest two metre station with an eight element Yagi in the clear to the south would be required to make a start. A rotator yes but elevation control is not required. Perhaps even a portable station for a sked?

Finally the next significant meteor shower with be the Lyrids Shower expected around 22nd April.

Please send any reports, questions or enquiries about meteor scatter in general or the digital modes used to Kevin VK4UH at *vk4uh@wia.org.au*

2014 WIA Conference

Sunshine Coast, Queensland 16-18 May 2014

For more information and booking, visit:
http://www.wia.org.au/joinwia/wia/2014agm/

Silent Key

Les Berryman VK4QI

It is my sad duty to advise that Les Berryman VK4QI became a SK on 31 October, 2013.

Les was born in Melbourne on 11 November, 1936 and would have been 77 this year. He was named after his father, also Leslie, who was lost in a road accident in January 1953, which was the same week he signed up for an apprenticeship as a fitter and turner. At 16 years of age he was now the man of the house.

During his apprenticeship he developed a love of all things mechanical. As his friends always said, 'He was always hotting them up'. Apart from engines, his early love was Rock and Roll, where he tried his best to imitate Buddy Holly, including the haircut and glasses. He was also a keen hockey player.

Les met the love of his life June and they were married in the 1950s. Les never enjoyed really good health and moved to Rockhampton in 1970 for the warmer weather. Les worked for Repco and discovered another passion - speedway. He built the famous No 37 FC Holden decked out in Repco colours. His joy was not in winning but as the pure fun of

racing. As his health deteriorated, he developed another interest, amateur radio. He upgraded to the full call VK4QI in the late 80s which he kept active until he passed away.

He embraced change and technology, becoming very competent with modern techniques including Skype, PSK31, SSTV and more. If you check out his QRZ Page, he always loved to have a chat.

Les was a very likeable character and would be there for anyone who needed assistance, including in the several hours before his death. He was 'just a good bloke'. He was also a practical joker and was a bit of a stirrer. During 2012 he was made the second Life Member of the Central Queensland Amateur Radio Association Inc. He also ran a Friday morning tea session known as the 'SHAG' group (Senior Hams and Geriatrics).

As his health got worse, the club members moved him and his wife out of the caravan park and into a villa unit where he could get assistance if required. He was soon known as the 'Mr Fixit' at the village. He then donated his eight metre plus caravan and annex to the Central Queensland Amateur Radio Association to be used at Headquarters as accommodation. The annex is now known as 'Berryman Lodge'. The caravan is being converted into a radio shack and accommodation.

There is so much more to this amazing man with not enough room to write about it. He was married for 55 years and is survived by his beautiful wife June and four sons, a daughter, eight grandkids and one great grandson.

73, old friend. RIP. Les VK4QI - Silent Key.

Submitted on behalf of the CQARA by Club Secretary Richard VK4FRIK.

Silent Key

Dr Ken Hicks ex VK2BKE and ex VK9LK

Ken Hicks will be remembered by many amateurs as VK2BKE and then VK9LK during the 16 years that he was the doctor on Lord Howe Island, from 1972 until 1988. Lord Howe Island callsigns originally used the VK2 prefix before changing to VK9 in 1984, when Ken became VL9LK.

Prior to taking up the Lord Howe Island posting he served two 12 month terms as a doctor in Antarctica for which he was awarded the Polar Medal. He also served a term as doctor on Cocos-Keeling Island. He was respected as a very experienced doctor.

Ken was a keen yachtsman and had first visited Lord Howe Island by yacht and was so impressed with the Island that when the opportunity arose he returned to become the local doctor in 1972. He met his wife Paulette when she came to the Island in 1974 as the hospital nurse.

While on Lord Howe Island Ken supported the island's community broadcast station with his technical expertise. He built an AM transmitter which was used by the station until it was replaced by a commercial AM broadcast transmitter. The station transmitted on 1494 kHz in the AM broadcast band until it moved to 100.1 MHz in the VHF FM broadcast band in the 1980s.

Ken began an ambitious project to build a fifty foot synthetic cement yacht on Lord Howe Island. For many years the hull was quite a landmark in his front yard on Lagoon Road. Unfortunately, he did not complete it before he left the Island in 1988 and it was eventually dismantled.

Ken passed away at home in Inverell, NSW, on 19 October, 2013, aged 91. Ken and Paulette lived on a small property at Inverell where they kept some horses.

Ken is survived by Paulette and their son Simon, and by David, a son from a previous marriage.

Vale: Dr Ken Hicks ex VK2BKE, ex VK9LK

Submitted by Henry Lundell VK2ZHE. Compiled from an article in the 25 October, 2013 edition of the 'Lord Howe Island Signal', and from personal reminiscences.

Contests

James Fleming VK4TJF

March is here again and signifies for me the start of a new contest season. There are some great international contests and of course my favourite field day contest.

The big one for March is the ARRL international SSB contest on the 1st and 2nd of March. The contest is a 48 hour contest that goes from 1000 UTC on Saturday to 1000 UTC Monday. This one should be fun and a good chance to get your headphones and microphones out for some good DX contacts into North America on the 160, 80, 40, 20, 15 and 10 metre amateur bands. If you really want to ramp up the fun, get some friends together and operate in the multi-op section. You can bet that there will be some keen contesters within Australia to make this contest competitive. Even if you are not into contesting this is a great opportunity to pick up some new states for the ARRL's Worked All States award. This is a nice contest to either operate in a single band or to try all of them. One can use any power from QRP to full legal limit here in Australia. Scoring is pretty simple, three points for a W/VE QSO and multipliers for contacts with the 50 states as well as the 13 provinces in Canada thus making 63 possible multipliers per band. There are many different categories from which to choose. They have a category called single operator unlimited with low or high power (no QRP) in which you can use the spotting networks and spotting assistance legally. Other categories are single operator all band where one can have power levels of QRP (five watts), low (150 watts) or high (400 watts). You can also do multi-operator single transmitter with low or high power or multi- two and multi-multi with high power. There are many different combinations. I'm sure that if you pick the right one for your circumstance you could easily earn a certificate. Just about any logging program will have this contest and it is very easy to email your file to the ARRL. However you don't even have to do that; even if you just give out a few numbers I'm certain any contest operator will appreciate it. Remember the exchange for this one is simply 59 and power output used so example 59 100 or 59 5 or 59 150 or 59 400. In return you will receive the RS 59 and the state or province, for example 59 CT for Connecticut or 59 BC for British Columbia.

The next big contest in March is the John Moyle Field Day on the 16th and 17th of March. The contest goes from 1100 UTC on Saturday to 1100 UTC on Sunday, only 24 hours. This in my view is both a field day and a contest. It is a laid back contest where you have time to give your name and location, and also a chance to work some DX in a field day setting, especially on CW where the rules stipulate that if they do not give you a serial number then just log it as 001. It is perfect for going camping during the weekend and making some great contacts. There are some nice scout camps and wildlife parks to do portable operations from. Not only is it a good way to test our emergency communication skills, it is a chance to operate on Friday night making contacts on the 40 and 80 metre bands under your own call sign before the contest starts. There is nothing better than sleeping under the stars and sharing the weekend with good mates.

There are many different entry categories broken down into single operator portable or multi-operator portable. Within each are three sub-categories, based on time: six hours or 24 hours, mode: CW, digital, phone, or all modes and bands: HF, VHF/UHF, or all bands. Home and SWL entries can only be all bands and all modes however

Contest Calendar for March 2014 - May 2014

Month	Date	Starts at	Spans	Name	Mode
March	1st - 2nd	0000 UTC	48 hours	ARRL International DX contest	SSB
	8th - 9th	1000 UTC	24 hours	RSGB Commonwealth contest	CW
	15th - 16th	**0100 UTC**	**24 hours**	**John Moyle Field Day**	**SSB/CW/Digital**
	15th - 16th	1200 UTC	24 hours	Russian DX contest	SSB/CW
	15th - 17th	0200 UTC	48 hours	BARTG HF RTTY contest	RTTY
	22nd	0000 UTC	24 hours	FOC QSO Party	CW
	29th - 30th	0000 UTC	48 hours	CQ WW WPX contest	SSB
April	5th	1000 UTC	02 hours	QRP Hours contest	SSB/CW/RTTY/ PSK31
	12th - 13th	0700 UTC	30 hours	JIDX CW contest	CW
	19th - 20th	2100 UTC	20 hours	YU DX contest	CW
	26th - 27th	1300 UTC	24 hours	Helvetia contest	SSB/CW/Digital
	26th - 27th	1200 UTC	24 hours	SP DX RTTY contest	RTTY
May	**3rd**	**1000 UTC**	**106 mins**	**Harry Angel Memorial 80 m sprint**	**Phone/CW/ Mixed**
	3rd - 4th	1200 UTC	24 hours	ARI International DX contest	SSB/CW/RTTY
	10th - 11th	1200 UTC	24 hours	Volta WW RTTY contest	RTTY
	10th - 11th	1200 UTC	24 hours	CQ-M International DX contest	SSB/CW
	17th - 18th	1200 UTC	24 hours	EU PSK DX contest	PSK63
	24th - 25th	0000 UTC	48 hours	CQ WW WPX contest	CW

can operate 24 hours or six hours. HF stations score two points per QSO and double that for CW. On VHF and UHF the longer the distance your contact is the more points you get. The way I see it is that you stand more of a chance getting a nice certificate if you go out portable only for the six hours. This year there is a new rule that if any station works the same station more than five times on any band or mode, both stations must enter a log to verify the contacts. This should not be a problem as most of the stations that work each other more than five times submit logs anyway. By the end of the contest everyone knows each other, this from working every three hour time block. A cohesive bond forms from knowing that you are both brothers in the amateur radio community and are dedicated operators. There is no advantage to working DX and no sub classes in power, nor any extra points for any particular HF band. So I reckon the best thing would be set up a dipole at your favourite camp site and have fun. Bring along a computer with the VKCL logging program on it and just email your log to the WIA when done. And for those who are not doing the contest please - any contact is a great contact! If you are mobile, at home, or just on the radio for an hour during the weekend just drop a signal report and number. For more details of the rules, check out the WIA webpage *http://www.wia.org.au/members/contests/johnmoyle/*

Don't forget to clear your work roster for a fun filled weekend of camping, radio, BBQ, ham radio friendship, and plenty of contacts.

COQC QRP Hours Contest 2014

Mike Dower VK2IG

Sponsored by the CW Operators' QRP Club (COQC), the aim of the QRP Hours contest is to make as many contacts as possible within a one-hour period using your choice of mode. While it is hoped that the event will be strongly supported by COQC members, it is open to all licensed amateur radio operators.

The contest is divided into two (2) one-hour periods. Modes and frequency sub-bands are allocated to each hour as shown in the table below.

Date/Time:	**Saturday, 5th April 2014, from 1000-1159 UTC.**
Frequency Band:	80 metres – see frequency/mode table below.
Category:	Single operator.
Modes:	CW or PSK31 or RTTY/SSB – see frequency/mode table below.
Power:	Preferably five watts, but not more than 10 watts average (CW/PSK31/RTTY) or PEP (SSB) at the transmitter output – this is to stress the QRP nature of the event.
Exchange:	A three-digit serial number starting at 001 and incrementing by one for each new contact.
Repeat Contacts:	No repeats – only one contact per mode per hour.

Frequency/mode table

Hour	Time (UTC)	Mode	Frequency (MHz)
First hour	1000-1059	CW or PSK31 or RTTY	3.500-3.535 (CW)
			3.620-3.630 (PSK31/RTTY)
Second hour	1100-1159	SSB	3.550-3.590

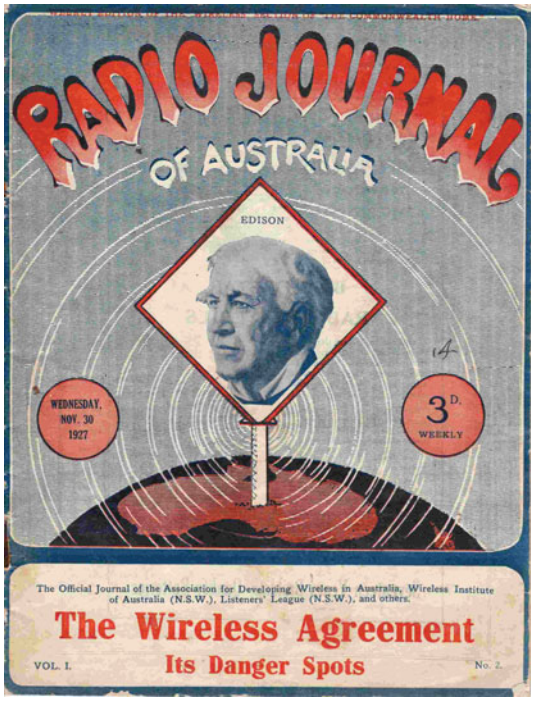
Scoring

- Score one (1) point per contact regardless of mode.
- No multipliers apply.
- QRP stations can count contacts with QRO stations towards their final score.

Logs

- Logs must show full details for each QSO, namely time (UTC), station worked, mode, exchange serial sent, and exchange serial received.
- A Summary Sheet showing operator's callsign, name, address and total points claimed must accompany the log.
- The preferred method of sending the log is email, but entrants must still include their postal address as per the Summary Sheet.
- Send logs and Summary Sheet to the Contest Manager, Mike Dower VK2IG, at email *qrphours@exemail.com.au* or snail mail to PO Box 8013, Gundaroo, NSW, 2620.
- Emailed logs must be postmarked no later than 2359 AEST on Wednesday, 23rd April, 2014; snail mailed logs must be postmarked no later than Wednesday, 23rd April, 2014.
- Feel free to include information about your station and band conditions; and any comments on what you liked, what you'd like to see included or improved, etc.
- Certificates will be awarded to the highest scorers in each mode in each VK State or Territory and ZL.
- These rules can also be found at *http://www.vkqrpclub.org/qrp_new/qrp1_contest_page.php*

Hamads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The Official Journal of the Association for Developing Wireless in Australia, Wireless Institute of Australia (N.S.W.), Listeners' League (N.S.W.), and others.
The Wireless Agreement
Its Danger Spots
VOL. I.
No. 2.

WANTED – NATIONAL

Copies of Radio Journal of Australia magazine

The WIA Archive is seeking copies of the Radio Journal of Australia for copying and/or adding to the WIA Archive's shelves.

Little is known about this magazine. The WIA holds one copy only. Volume 1, Number 2 published on 30th November 1927 which contains 64 pages. The magazine claims to be the Official Organ of the Association for Developing Wireless in Australia, the Listeners' League (N.S.W.) and of importance to us, the Wireless Institute of Australia (N.S.W.).

The magazine contains articles of general radio interest, a comprehensive weekly radio guide for stations in N.S.W., S.A. Qld. and Vic. and some notes from the WIA, NSW Division. It was published in Sydney, presumably commencing on 23rd November 1927.

It is of interest to note that the magazine's Editor was George A. Taylor, the person responsible for calling the first meeting of Sydney wireless experimenters in March 1910 from which the WIA grew. Taylor was never known to be a member of the WIA, rather he returned to his interests in aviation and defence. Later he went on to form the Association for Developing Wireless in Australia, an organisation predominately representing those involved in commercial broadcasting.

There is little doubt that Australia had a colourful and heady start to those early days of radio communication and broadcasting - in all of its forms and magazines such as this provide a glimpse of that exciting pioneering time past!

Please contact WIA Historian, Peter VK3RV via email *vk3rv@wia.org.au* or c/o the National Office in Bayswater if you can help us locate copies of this magazine.

FOR SALE – VIC

Icom IC-706MKIIG HF/VHF/UHF transceiver plus IC-AH4 ATU with antennas. Installed in 2005 Land Rover Discovery 3S in excellent condition and outfitted with heaps of goodies. Priced at around $25,000 – the attached Land Rover is free.
Neil Sleep *vk3glu@wia.org.au*

FOR SALE – NSW

CTCSS encoders, dual frequency, 91.5 Hz or 123 Hz. Micro controller crystal locked.

Small size to fit most VHF/UHF tranceivers. The cost is $18.00 or kit $15.00, plus postage.

Contact the Hunter Radio Group, via email to *rprout@idl.net.au*

HP 1710A 150 MHz two channel oscilloscope. One channel not working but other is fully operational.

RACAL type 409 modulation meter 3 MHz-1200 MHz, fully operational. Archive equipment. Either item will take any reasonable quote.

Contact Arthur VK2DKF QTHR or email *arthur.forster@bigpond.com*

Ham radio equipment ex Hans VK2FTZ - SK

1 Collins linear amplifier, 30 LI, no serial number.
2 Yaesu all band all mode transceiver, FT-897, S/N 6C670136.
3 Kenwood TR-2500, two metre HH, S/N 3033093.
4 Powertech regulated power supply, 13.8 VDC, 22 A, S/N 29314015
5 Heathkit audio wattmeter, 220 V (from Daystrom Ltd., Gloucester, England). No manual.
6 Hustler mobile antenna whips, (but no mount), RM40, RM20, RM15, RM10, MO 1 mobile.

Instruction manuals available for items 1, 2 and 3.

No reasonable offer refused on any item. All are ex Sydney.

Contact Mannie VK2WMS on (02) 9416 1876 for information on above.

WANTED – NSW

Number 11 wireless set.

Please contact Nick Pritchard, 7/47 Amor Street, Asquith. NSW 2077 or on phone 02 9477 2134.

HP 1740a oscilloscope, either working or not, for spare parts. In particular HP 5081-3030 vertical preamp hybrid that is common to all 17XX models is wanted. Let me know what you have.

Please Contact Chris via email *vk2cy@wia.org.au* or QTHR, or phone anytime and leave message on 02 9763 1407.

FOR SALE - SA

The VK5JST Aerial Analyser (AR May 2006). Over 10,000 built, and still available from the Adelaide Hills Amateur Radio Society. For full details see *www.ahars.com.au*

WANTED - QLD

One single pole six (6) position ceramic switch. To discuss price and condition reply to Mervyn VK4DV, phone 07 4928 5537 nights or by email to *vk4dv@yahoo.com.au*

Contributions to Amateur Radio

AR is a forum for WIA members' amateur radio experiments, experiences, opinions and news.

Your contribution and feedback is welcomed.

Guidelines for contributors can be found in the AR section of the WIA website, at http://www.wia.org.au/members/armag/contributing/

Email the Editor:
editor@wia.org.au

About Hamads

- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from those who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising on these pages Contact admanager@wia.org.au
- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
- Separate forms for For Sale and Wanted items. Include name, address STD telephone number and WIA membership number.

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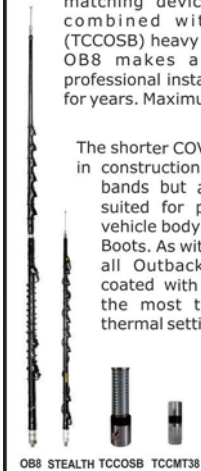

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WIA Functional Committees

The WIA is a membership organisation with a very wide range of complex functions and member services. Core functions and services are administrative in nature (general administrative functions, membership services, examination and callsign management, financial etc…) and are performed by salaried staff.

Volunteers perform a diverse range of highly specialist functions (ACMA liaison, Frequency Co-ordination, Standards liaison, Interference issues, technical support and training and assessment etc.). These volunteers provide the majority of member services, however they have been loosely organised and often overstretched.

The new committee system attempts to structure the WIA's non-core activities into 10 broad functional areas, each comprising a team of volunteers under the direction of the WIA Board. This structure is intended to spread the workload on our volunteers, improve communications between members and the WIA Board, improve services to members, and encourage more people to become involved in the WIA.

WIA Committee Charters

Spectrum Strategy Committee

Phil Wait VK2ASD (Board member – President); Geoff Atkinson VK3AFA (IARU Specialist); Peter Young VK3MV (Regulatory Counsel); Dale Hughes VK1DSH; Roger Harrison VK2ZRH; Doug McArthur VK3UM

- Perform all ITU and IARU liaison activities.
- Liaise with, and act as the 1st point of contact for, the ACMA.
- Advise the Board, and enact Board policy in relation to all radio communications regulatory issues and the LCD.
- Represent the WIA to State and Local Government
- Represent the WIA to Standards Australia
- Provide specialist technical advice and coordinate repeater and beacon licence applications and frequency allocation.
- Develop responses to significant and prolonged harmful interference issues affecting amateur radio operations.
- Provide an information resource for EMC/EMR issues.
- Administer the IARU Monitoring Service in Australia
- Provide a technical resource to other committees and the WIA Office.

Administrative & Finance Committee

John Longayroux VK3PZ - WIA Treasurer (Committee leader); Greg James VK2GRU - WIA Assistant Treasurer; David Williams VK3RU - WIA Company Secretary; Mal Brooks VK3FDSL - WIA Office Manager; Phil Wait VK2ASD - WIA Board member – President; Chris Platt VK5CP - WIA Board member - Vice President

- Responsible for the efficient and correct operation of the WIA office.
- Responsible for staffing and workplace safety.
- Provide a specialist administrative resource to the WIA office as required.
- Manage contractual agreements.
- Manage business relationships.
- Ensure compliance with the ACMA Business Rules
- Prepare yearly budgets
- Prepare quarterly financial reports for the Board
- Prepare independently reviewed YE financial reports and balance sheets for circulation to the membership prior to each Annual General Meeting.
- Manage insurances and to be responsible for currency of insurance policies.
- Maintain a complaints register.
- Ensure complaints are handled in accordance with WIA policy and any contractual agreements.

Communications, Marketing & Publications Committee

Robert Broomhead VK3DN - Committee Leader; Roger Harrison VK2ZRH - Deputy Leader

- Communication with members and the public:
- Communicate with the membership.
- Publicise WIA activities and initiatives.
- Develop strategies and resources for the promotion of Amateur radio to the public.
- Develop strategies and resources for the promotion of WIA membership to the Amateur community.
- Supervise and/or perform promotional activities.
- Co-ordinate the yearly AGM activities

Education Committee

Fred Swainston VK3DAC - Co-Leader; Owen Holmwood VK2AEJ - Co-Leader; Ron Bertrand VK2DQ; Mal Brooks VK3FDSL – Administration; Robert Broomhead VK3DN - Systems

- In association with the WIA's RTO and affiliated clubs offering training services, develop and administer the WIA's training and assessment systems.
- In association with the Spectrum Strategy Committee, develop and maintain the various licence syllabi and associated question banks.
- In association with the Community Support Committee and the RTO, develop and maintain the Emergency Communications Operator scheme.
- Ensure the confidentiality and security of all personal information, question banks and examination papers.

Affiliated Clubs Committee

Phil Wait VK2ASD - WIA Board member – President; Mal Brooks VK3FDSL - WIA Office Manager; Ted Thrift VK2ARA - Clubs Liaison officer; John Longayroux VK3PZ - WIA Treasurer

- Manage all arrangements between the WIA and WIA Affiliated Clubs
- In cooperation with the Administrative / Financial committee, manage the Club Insurance Scheme
- Encourage stronger relationships and communications flow between the WIA and WIA Affiliated Clubs
- Encourage increasing WIA membership ratios in Affiliated Clubs
- Manage the Club Grants Scheme
- Identify and bring regional Affiliated Club issues to the attention of the WIA Board

Community Service Committee

Bob Bristow VK6POP - Committee Leader; Fred Swainston VK3DAC; Greg James VK2GRJ; Ewan McLeod - WIA Director; Paul Hoffmann VK5PH

- Develop, promote and co-ordinate all WIA community support activities

Radio Activities Committee

Chris Platt VK5CP - WIA Board member; Geoff Atkinson VK3AFA

- All activities associated with actual radio operation, such as: contests, awards, distance records, QSL services, ARISS, AMSAT, ARDF etc.

Historical & Archive Committee

Peter Wolfenden VK3RV - Committee Leader; Roger Harrison VK2ZRH - Deputy Leader; Linda Luther VK7QP; Martin Luther VK7GN; Jenny Wardrop VK3WQ; Will McGhie VK6UU; Ian Morris VK3IFM; Drew Diamond VK3XU; David Wardlaw VK3ADW

- Develop, maintain and preserve the WIA's historical and archive collection
- Encourage access to the collection by WIA members and those seeking historical material for publication.

New Initiatives Committee

Phil Wait VK2ASD - Board member – President; Robert Broomhead VK3DN; Roger Harrison VK2ZRH; David Williams VK3RU - WIA Company Secretary

- Think-tank ideas and initiatives to advance amateur radio and WIA membership.
- On approval by the Board, run proof of concept trials.

IT Services Committee

Robert Broomhead VK3DN - Committee Leader; Tim Broomhead VK3KTB - Assistant Webmaster / Programmer; Marc Hillman VK3OHM - Awards System Developer

- Provide an IT resource to other committees and the WIA Board.
- Be responsible for the off-site data back-up of all IT systems information.
- To update and maintain the WIA website as required.
- Advise the Administrative / Financial committee in relation to the MEMNET Cloud Service contract.

2014 WIA Annual Conference

16, 17 & 18 May 2014, Sunshine Coast

The WIA is pleased to announce details for the **WIA 2014 Annual Conference** being held on the Sunshine Coast. The host club is the *Sunshine Coast Amateur Radio Club*, led by Richard VK4RY and Trent VK4TS.

The weekend program will commence on **Friday** evening at the *Alexandra Heads Surf Life Saving Club* and there will be several breakout options for like-minded amateurs to get together.

On **Saturday** morning the WIA Annual General Meeting followed by the Open Forum will be held in the *Shed* at *Aussie World* with lunch provided for all registered attendees.

On **Saturday** afternoon a technical symposium is being planned.

On **Saturday** evening the Annual Dinner will be held in the *Shed* at *Aussie World.*

Some of Saturday events

The WIA Annual General Meeting & Open Forum

Technical Symposium - Rescue

- EmCom interfacing WICEN to the real World
  Peter Schrader VK4EA
- Promoting your Club
  Scott Watson VK4CZ
- EMR Obligations
  Roger Harrison VK2ZRH
- Fund Raising for Clubs
  Richard Philp VK4RY
- 2 m meteor scatter
  Kevin Johnstone VK4UH

Sunday will feature a visit to the *Sunshine Coast* base of the *RACQ Rescue Helicopter* and various rescue venues on the *Mooloolaba Spit*, culminating in a visit to *Underwater World*.

For those not travelling back to their home QTH on **Sunday** afternoon and who will be staying on **Sunday** evening, then the host club the *Sunshine Coast Amateur Radio Club* would like to invite you to a relaxing evening BBQ at *SCARC HQ*.

WIA Chartered Buses are being provided for transport between weekend venue locations. Please see the WIA website for booking details.

The cost for the **Sunday** evening BBQ will be $10 per person; alcoholic drinks will be BYO, soft drinks will be available. *Photos courtesy of Aussie World.*

For more information about accommodation and how to register online, visit our site:
http://www.wia.org.au/joinwia/wia/2014agm/

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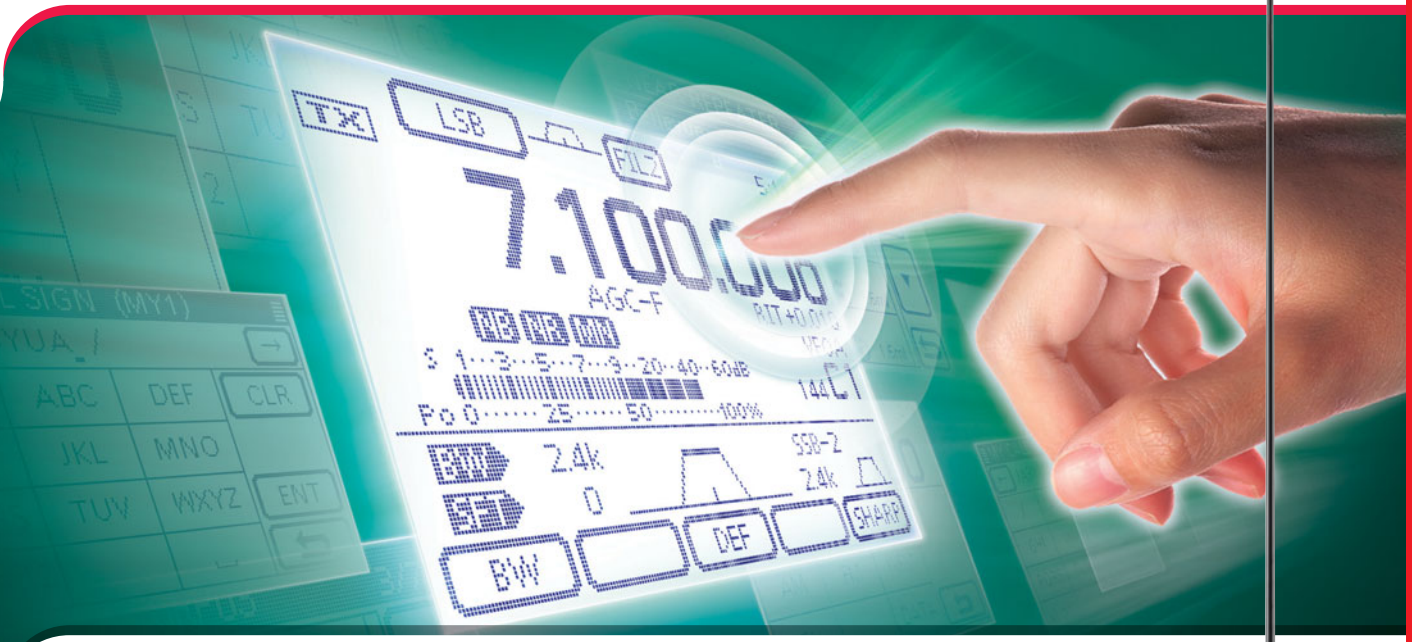

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